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Water-Works
of
Canada

Leo G. Denis



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Commission of Conservation
Canada

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(Commission of Conservation)

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General publications
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WATER-WORKS
OF
CANADA

Compiled by
LEO G. DENIS, B.Sc.
Hydro-Electric Engineer of the
Commission of Conservation

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17/7/13

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OTTAWA



Committee on Waters and Water-Powers

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MR. C. A. McCOOL
HON. W. R. ROSS**

OTTAWA, Dec. 11, 1912

Sir:

I have the honour to transmit herewith a report on the Water-Works of Canada, which gives statistics of the principal physical and financial data respecting these public utilities.

Your obedient servant

JAMES WHITE

Secretary

HON. CLIFFORD SIFTON,
Chairman,
Commission of Conservation.

To FIELD MARSHAL HIS ROYAL HIGHNESS PRINCE ARTHUR WILLIAM
PATRICK ALBERT, DUKE OF CONNAUGHT AND OF STRATHEARN, K.G.,
K.T., K.P., &c., &c., GOVERNOR GENERAL OF CANADA

May it Please Your Royal Highness:

The undersigned has the honour to lay before Your Royal Highness a report on the Water-Works of Canada.

Respectfully submitted

CLIFFORD SIFTON

Chairman

OTTAWA, Dec. 12, 1912.

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Courtesy, Dept. of Works, Toronto

TORONTO FILTRATION PLANT.—INTERIOR OF FILTER, SHOWING UNDER-DRAINS AND FIRST GRAVEL LAYER.

Water-Works of Canada

INTRODUCTION

THE object of the present report is to present in a form readily available for reference, the principal physical data respecting the water-works systems now in existence in the Dominion of Canada.

Pains have been taken to make the information herein tabulated as accurate as possible. The method employed in collecting it may be described briefly. The first step was to send out the following circular letter to all cities, towns and villages in the Dominion:

"The Commission of Conservation is collecting information respecting water supply in Canada and is desirous of enlisting your aid in the work. Will you kindly send a description of the water supply of your town or city, including therein full information along the lines suggested by the questions below? Your thorough familiarity with your plant will doubtless enable you to furnish us with many interesting details that cannot be covered by a set of arbitrary questions such as is here appended.

- (1) Name of city or town.....
- (2) Population
- (3) Is plant privately or municipally owned?.....
 - If the former, kindly state name of company
- (4) Source of supply—whether taken from lake, river or springs.....
Give distance of source of supply from centre of distribution.....
- (5) Method of supply—whether by gravity or direct pressure.....
 - If pumping is used, state
 - (a) Maximum and average h.p. used.....
 - (b) Kind of power (steam, electric, etc.).....
 - (c) If pumped to reservoir, stand-pipe, tank or directly into mains.....
- (6) Cost of supply plant.....
- (7) Cost of distribution system.....
- (8) Name and official capacity of officer in charge.....

- (9) Mains:
- (a) Lengths in miles.....
 - (b) Kind of material in pipe
 - (c) Sizes and lengths of each kind.....
-
- (10) Number of hydrants.....
- (11) Daily consumption in imperial gallons.....
- (12) Ordinary pressure in pounds.....
- (13) Fire pressure.....
- (14) Annual cost of maintenance.....
- (15) Number of services and kind of pipe used for same.....
-
- (16) Number of consumers.....
- (17) Annual revenue from consumers.....
- (18) Annual revenue from public uses.....
- (19) Is water supplied on flat or meter rate?.....
What are charges for each?.....
- (20) If reservoirs are used, state
 - (a) Number.....
 - (b) Sizes.....
- (21) Is any part of your plant duplicated for use in case of accident or emergency?.....
If so, state which parts.....
- (22) Year in which plant began operations?.....
- (23) Do you use a filter plant?
If so, what kind?.....
Are results satisfactory?"....."

Answers to this letter were all very intelligible and complete; but, unfortunately, they came in very slowly, necessitating the sending of several reminders to the tardy municipalities. This, of course, took some time; but a very complete set of answers was finally obtained. However, as such a long period of time had elapsed between the sending out of the circular letter and the receipt of the last answers, it was feared that some of the information first obtained had become out of date. In order to remedy this a second circular letter was despatched; but, in order to facilitate matters, a synopsis of the information previously obtained was sent to the officer in charge of the different water-works, asking him to revise, correct and bring it up to date. To further expedite matters, personal visits were paid to some of the delinquent towns by the Hydro-Electric Engineer of the Commission, and the deficient information was obtained directly.

The information thus obtained has been arranged in a concise and convenient form, and it is hoped that it will prove valuable to those interested

in water-supply generally, and that it will also help those directly connected with water-works systems to become acquainted with conditions relating to other plants than their own.

Immediately following will be found charts and tables summarizing the information in the body of the work and emphasizing points of special interest, such as growth of the number of water-supply systems, sources of supply, rates, consumption, etc.

EXPLANATORY

The information relating to each water-works is given under the name of the city, town or village, these being arranged alphabetically under each province, while the provinces are arranged geographically from east to west.

The population served, as estimated by the municipality concerned, is given in parentheses following directly the name of the county in which the municipality is situated. In a few cases, the population given does not agree with recent census figures, this being due to the fact that sometimes the water-works system extends beyond the municipal limits, while, in other cases, it does not include the whole of the municipality.

Under "rates," the figures given for "bath-room" include both bath and water closet. The figures for flat rate for dwelling or family include the charge for bath-room service, except where a rate is given for "bath-room" separately. Unless otherwise stated, the yearly flat rate charges are given.

The "consumption" is given in imperial gallons per day. Wherever it was possible, the total cost or value of the plant has been separated into "supply plant," and "distribution system." The former includes all material, etc., except the street mains, while the latter includes street-mains, hydrants and accessory material. In many instances, however, the officer in charge was unable to give these separately and in such cases the figures for the whole plants are given.

COMMISSION OF CONSERVATION

SUMMARY TABLE
TOTAL COST OF PLANTS, CONSUMPTION, MAINTENANCE CHARGES, ETC., FOR THE DIFFERENT PROVINCES

(In this compilation, the items which it was impossible to obtain from the municipalities, have been estimated.)

Province	Cost of Plants (dollars)	Total Daily Consumption (imp. gal.)	Annual Maintenance, exclusive of interest (dollars)	Total Length of Mains (miles)	Estimated cost per 1,000 gal.* (cents)	Estimated cost per Capita per year* (dollars)	Daily Consumption per Capita (imp. gal.)
Nova Scotia.....	4,534,682	24,436,662	176,602	393	7	3.76	147
Pr. Edward Is.....	365,596	802,000	11,543	29	16.4	2.87	48
New Brunswick.....	3,563,939	15,278,500	101,616	186	8.2	4.82	161
Quebec.....	31,224,883	110,800,900	731,694	1,157	9.5	3.92	113
Ontario.....	37,813,147	153,203,363	1,601,077	2,182	9.6	4.21	120
Manitoba.....	4,852,868	9,794,213	251,141	297	20.6	3.46	46
Saskatchewan.....	2,461,810	4,480,000	131,202	156	23	3.86	46
Alberta.....	4,485,802	14,685,000	248,589	313	13	6.27	132
British Columbia.....	6,263,769	26,997,000	181,735	502	8.2	3.44	115
Canada.....	95,566,496	360,477,638	3,435,199	5,215	10	4.12	113

* These costs are approximate only, and have been calculated from the annual maintenance costs, plus an allowance of 10 per cent of the cost of plants for interest and for depreciation.

NOVA SCOTIA

AMHERST, Cumberland co., (10,320). In operation since 1892; owned by municipality. **Supply:** pumped from Nappan river, 3 miles distant, directly to mains and reservoir; steam power used; pumps are in duplicate. **Reservoir and Storage Basin:** 82,000,000 gal. capacity. **Distribution:** 11 miles C. I.* mains; 143 hydrants; 1,471 services. **Pressure:** 67 lbs. **Consumption:** 1,500,000 gal. **Financial:** cost of supply plant and distribution, \$291,000; annual maintenance, \$4,391; revenue, \$18,376. **Rates:** flat rate, private family, \$5; bath-room, \$4; and \$1 for each additional tap; meter rate, 8c. per 1,000 gal. Officer in charge: Chas. Campbell, Water-works Engineer.

ANNAPOLIS ROYAL, Annapolis co., (1,000). In operation since 1889; owned by municipality. **Supply:** by gravity from "First Pond" lake; area, 24 acres; depth, 30 ft.; 350 ft. above town level; 4 miles distant. **Distribution:** 2 miles of 8 in., $2\frac{1}{2}$ miles of 6 in., and 1 mile of 4 in. C. I. pipe; 26 hydrants; 105 services feeding whole town. **Pressure:** 100 lbs. **Financial:** cost of pipe line and hydrants, \$27,500; total cost, \$31,000; annual maintenance, \$2,100; revenue, \$2,600. **Rates:** flat rate, \$6 per family; \$5 for bath-room. Officer in charge: Samuel Rippey.

ANTIGONISH, Antigonish co., (2,000). In operation since 1890; owned by municipality. **Supply:** brook, by gravity from two reservoirs, 3 miles distant. **Reservoirs:** two, capacity 3,000,000 gal. and 1,500,000 gal. **Distribution:** 7 miles of C. I. mains, 4 in., to 8 in.; 26 hydrants; 300 services, $\frac{3}{4}$ in. galvanized iron pipe; 310 consumers. **Pressure:** ordinary, 70 lbs.; fire, 140 lbs. **Financial:** cost of plant, \$48,000; annual maintenance, \$900; revenue from consumers, \$2,300; from public uses, \$1,050. **Rates:** flat rate, tap and bath-room, \$11; tap, \$5. Officer in charge: S. A. Hulbert, Superintendent.

BADDECK, Victoria co. No public supply. Two hotels have a private supply by gravity from a spring.

BRIDGETOWN, Annapolis co., (1,000). In operation since 1887; owned by municipality. **Supply:** by gravity from springs and Crosskill lake on the North mountain, $2\frac{1}{2}$ miles distant. **Distribution:** 1 mile of 8 in., 3 miles of 6 in., 6 miles of 4 in. C. I. pipe; 31 hydrants; 315 services, $\frac{1}{2}$ in. galvanized iron. **Reservoirs:** two—1,500,000 and 22,000,000 gal. **Pressure:** 100 lbs. **Consumption:** 90,000 gal. **Financial:** total cost of plant,

*C.I.=cast iron.

COMMISSION OF CONSERVATION

\$35,600; annual maintenance, \$2,000; revenue, \$2,200. **Rates:** flat rate, \$5 for first tap or bath-room and \$1 per additional tap; special rates for factories, etc., meter rate 5c to 50c per 1,000 gal., according to amount. Officer in charge: James Goldsmith, Superintendent.

CANNING, Kings co., (600). In operation since 1894; owned by municipality. **Supply:** by gravity from springs and brook, 2 miles distant. **Distribution:** 2 miles of 8 in. and 2 miles of 6 in. and 4 in. C. I. pipe; 29 hydrants; 150 services, $\frac{1}{2}$ in. galvanized iron. **Reservoir:** One, 2,000,000 gal. **Pressure:** 50 to 75 lbs. **Financial:** total cost of plant, \$27,000; annual maintenance, \$250; revenue, \$850. **Rates:** flat rate, \$5 for first domestic tap, \$1 for additional; \$5 for bath-room. Officer in charge: W. D. F. Smith, Superintendent.

DARTMOUTH, Halifax co., (5,058). In operation since 1892; owned by municipality. **Supply:** by gravity from Lamont and Topsail lakes, areas, 23 and 141 acres, respectively, and $2\frac{1}{2}$ miles distant. **Distribution:** 15 miles of C. I. mains, 4 in. to 20 in.; 100 hydrants; 925 services, lead and galvanized iron pipe; **Pressure:** 25 lbs. to 95 lbs. **Financial:** total cost of plant, \$258,200; annual maintenance, \$14,300; revenue, \$14,823. **Rates:** flat rate, \$4 and upward per dwelling, based on value of property; meter rate, 8c. to 15c. per 1,000 gal. Officer in charge: W. L. Bishop, Superintendent and Engineer.

DIGBY, Digby co., (1,500). In operation since 1895; owned by municipality. **Supply:** by gravity from spring brooks and Lily lake, 3 miles distant. **Reservoirs:** two, one at source of supply, capacity 14,000,000 gal., and one in town, capacity 500,000 gal. **Distribution:** 9 miles of C. I. mains, 4 in. to 10 in.; 21 hydrants; 285 services, 1 in. lead pipe. **Pressure:** ordinary, 80 lbs., fire, 125 lbs. **Financial:** cost of plant, \$40,000; annual maintenance, \$730; revenue, \$2,760. **Rates:** flat rate, \$5 per family; \$5 for bath-room. Officer in charge: Geo. A. Vye, Superintendent.

GLACE BAY, Cape Breton co., (17,000). In operation since 1903; owned by municipality. **Supply:** by gravity from lake, 6 miles distant, to pumps, thence pumped to mains and reservoir; pumps are in duplicate; steam power used, maximum 125 h.p., average 110 h.p. **Reservoir:** one of 1,000,000 gal. **Distribution:** $30\frac{1}{2}$ miles of C. I. and galvanized iron pipe, 2 in. to 16 in.; 97 hydrants; 1,800 services, $\frac{3}{4}$ in. galvanized iron pipe. **Pressure:** ordinary, 75 lbs. at high elevation; fire, 30 lbs. at high elevation to 75 lbs. at low elevation; average, 65 lbs. **Consumption:** 1,500,000 gal. **Financial:** total cost of plant, \$335,366; annual main-

tenance, \$11,439; interest, \$12,000; revenue, \$20,687. **Rates:** flat rate, \$6 to \$13 per dwelling. Officer in charge: J. H. Morris, Superintendent.

HALIFAX, (46,000). In operation since 1848; owned by municipality. **Supply:** by gravity from Long lake and chain of lakes 4 miles distant, and Spruce Hill lakes, 7 miles distant. **Distribution:** 76 miles of C. I. mains, from 4 in. to 27 in.; 465 hydrants; low service mains are in duplicate; 7,600 services, lead pipe. **Pressure:** ordinary, 35 lbs.; fire, 60 lbs. **Consumption:** 10,000,000 gal. **Financial:** total cost of plant, \$1,250,000; annual maintenance, \$90,000; revenue, \$100,000. **Rates:** flat rate on assessment basis, 26c. per \$100; meter, 5c. to 15c. per 1,000 gal. Officer in charge: F. W. W. Doane, City Engineer.

HANTSPOST, Hants co., (700). In operation since 1905; owned by municipality. **Supply:** by gravity from Davison lake, 7 miles distant. **Reservoir:** one, 500,000 gal. capacity. **Distribution:** 11 miles of C. I. mains, 6 in. and 4 in.; 28 hydrants; 146 services, $\frac{1}{2}$ in. galvanized iron pipe. **Pressure:** 110 lbs. **Financial:** cost of plant, \$42,000; annual maintenance, \$400; revenue, \$1,200. **Rates:** flat rate, tap, \$6 per year; bath-room, \$5. Officer in charge: Geo. F. Ferguson, Town Clerk.

KENTVILLE, Kings co., (2,300). In operation since 1887; owned by municipality. **Supply:** by gravity from Mill brook and Magee lake, 4 miles distant. **Reservoirs:** two, 1,000,000 and 10,000,000 gal. capacity. **Distribution:** 12 miles of C. I. mains, 4 in. to 8 in.; 62 hydrants; 400 services, $\frac{1}{2}$ in. to 2 in. galvanized iron pipe. **Pressure:** 100 lbs. **Consumption:** 250,000 gal. **Financial:** total cost of plant, \$47,773; annual maintenance, \$613; interest and sinking fund, \$2,206; revenue, \$4,132. **Rates:** flat rate, tap, \$5 per year; bath-room, \$10.50. Officer in charge: J. R. Neville, Superintendent.

LIVERPOOL, Queens co., (2,100). In operation since 1899; owned by municipality. **Supply:** by gravity from Town lake, 2 miles distant. **Distribution:** 5 miles of C. I. mains, 6 in. to 10 in.; 30 hydrants; 260 services, galvanized iron pipe. **Pressure:** 75 to 85 lbs. **Financial:** total cost of plant, \$30,500; annual maintenance, \$500, (exclusive of interest); revenue from consumers, \$2,139; from public uses, \$300. **Rates:** flat rate basis, \$5 per dwelling; bath-room, \$3. Officer in charge: A. H. Drew, Superintendent.

LOUISBURG, Cape Breton co., (1,000). In operation since 1900; owned by the Louisburg Electric, Water & Power Co. **Supply:** by gravity from Stewart lake and Jerrott brook, 1 mile distant. **Distribution:** 8 in.

and 6 in. C. I. pipe; 60 services, $\frac{3}{4}$ in. galvanized iron pipe. **Pressure:** 69 lbs. (max.) **Financial:** cost of plant, \$20,000; annual maintenance, \$350; revenue, \$400. **Rates:** flat, \$5 per service. Officer in charge: F. O'Neil, Sec.-Treas.

LUNENBURG, Lunenburg co., (3,000). In operation since 1895; owned by municipality. **Supply:** from Cantelope lake, 3 miles distant; pumped into a reservoir by water-power. **Reservoir:** 1,250,000 gal. capacity. **Distribution:** 9 miles of C. I. mains, 4 in. to 10 in.; 54 hydrants; 450 services, $\frac{3}{4}$ in. to 2 in. galvanized iron pipe. **Pressure:** 45 to 95 lbs. **Financial:** cost of plant, \$90,000; annual maintenance, \$6,000, including interest and debentures; revenue, \$6,278 from consumers. **Rates:** flat rate, \$8 for first tap, \$2 for each additional; bath-room, \$5. Officer in charge: R. A. Conrad, Superintendent.

MIDDLETON, Annapolis co., (900). In operation since 1891; owned by municipality. **Supply:** by gravity from a lake and springs, 3 miles distant. **Reservoirs:** lake serves as reservoir (40 acres); another reservoir, 480,000 cu. ft. **Distribution:** 7 miles of C. I. mains, 4 in. and 6 in.; 24 hydrants; 200 services, $\frac{3}{4}$ in. to 2 in. galvanized iron pipe. **Pressure:** ordinary, 90 lbs.; fire, 120 lbs. **Financial:** total cost of plant, \$34,000; annual maintenance, \$200; revenue from consumers, \$2,000; from public uses, \$300. **Rates:** flat, first tap, \$1 to \$10. Officer in charge: Jas. A. Gates, Town Clerk.

NEW GLASGOW, Pictou co., (7,500). In operation since 1887; owned by municipality. **Supply:** pumped directly into mains from East river, $2\frac{1}{2}$ miles distant; steam power used, average, 100 h.p. **Reservoir:** one, 2,000,000 gal. capacity. A gravitation system from McLellan brook and Forbes lake, to supply 2,500,000 gal. is being installed at a cost of \$200,000. **Distribution:** 20 miles of C. I. mains, 4 in. to 14 in.; 75 hydrants; 1,300 services, $\frac{1}{2}$ in. to $\frac{3}{4}$ in. lead pipe. **Pressure:** 92 lbs. **Consumption:** 1,750,000 gal. **Financial:** cost of supply plant, \$20,000; distribution, \$158,000; annual maintenance, \$10,000; revenue from consumers, \$22,600; from public uses, \$1,685. **Rates:** flat rate, \$5 and upward per dwelling; meter rate, 3c to 30c. per 1,000 gal. Officer in charge: James Roy, Engineer.

NORTH SYDNEY, (See under Sydney Mines.)

OXFORD, Cumberland co., (1,400). In operation since 1897; owned by the Oxford Water & Power Supply, Ltd. **Supply:** by gravity from springs 1 mile distant. **Reservoirs:** two, 328,000 gal. and 72,000 gal. capacity.

Distribution: 3 miles of mains, 4 in. to 8 in.; 9 hydrants; 200 services, galvanized iron pipe. **Pressure:** 30 lbs. **Financial:** total cost of plant, \$26,000; annual maintenance, \$175; revenue, \$1,800. **Rates:** flat rate, \$6 per tap; \$6 for bath-room. Officer in charge: T. M. Johnson, Secretary-treasurer.

PARRSBORO, Cumberland co., (2,500). In operation since 1897; owned by municipality. **Supply:** by gravity from springs and brooks, 3 miles distant. **Reservoirs:** one of 1,000,000 gal. and two others formed by dams of 1,000,000 and 2,000,000 gal. capacity. **Distribution:** 4 miles of C. I. mains, 4 in. to 10 in.; 52 hydrants; 400 services. **Pressure:** 70 lbs. **Consumption:** 225,000 gal. **Financial:** total cost of plant, \$60,000; annual maintenance, \$2,840 (including interest); revenue from consumers, \$2,700; from public uses, \$2,200. **Rates:** flat rate, \$5 for first tap; bath-room, \$4. Officer in charge: Thos. Gallagher.

PICTOU, Pictou co., (3,200). In operation since 1901; owned by municipality. **Supply:** pumped to stand-pipe from artesian wells, $\frac{1}{2}$ mile distant; steam power used, 30 to 45 h.p.; distribution by gravity from stand-pipe; boilers and pumps are in duplicate. **Distribution:** 9 miles of C. I. mains, 6 in. to 12 in.; 65 hydrants; 620 services, $\frac{3}{4}$ in. and 1 in. galvanized iron pipe. **Pressure:** 110 lbs. **Consumption:** 190,000 gal. **Financial:** cost of supply plant, \$20,000; cost of distribution system, \$100,000; annual maintenance, \$2,850; interest on bonds, \$4,733; annual revenue from consumers, \$5,800; from public uses, \$1,217. **Rates:** flat rate, first tap, \$6, additional taps, \$1 each; bath-room, \$6; special rates for factories, etc. Officer in charge: Jno. R. Adams, Superintendent.

SPRINGHILL, Cumberland co., (5,700). In operation since 1904; owned by municipality. **Supply:** by gravity from springs $6\frac{1}{2}$ miles distant. **Reservoirs:** two, of 600,000 gal. and 400,000 gal. capacity, one stand-pipe of 155,000 gal. capacity. **Distribution:** 22 miles of C. I. mains, 4 in. to 12 in.; 63 hydrants; 1,000 services, $\frac{1}{2}$ in. lead pipe. **Pressure:** 35 to 120 lbs. **Consumption:** 400,000 gal. **Financial:** cost of supply plant, \$110,000; cost of distribution system, \$30,000; annual maintenance, \$970; revenue, \$8,300. **Rates:** flat rate, \$6 per tap. Officer in charge: G. R. Oulton, Superintendent.

STELLARTON, Pictou co., (4,000). In operation since 1892; owned by municipality. **Supply:** pumped to reservoir from East river, $\frac{1}{2}$ mile distant; steam power used, 150 h.p.; boilers and pumps are in duplicate; gravel filter used with satisfactory results. **Reservoir:** one, of 1,000,000 gal. capacity. **Distribution:** 8 miles of C. I. mains, 4 in. to 10 in.; 60

hydrants; 610 services, $\frac{1}{2}$ in. lead pipe. **Pressure:** ordinary, 75 lbs.; fire, 80 lbs. **Consumption:** 450,000 gal. **Financial:** total cost of plant, \$80,000; annual maintenance, \$7,200; revenue, \$7,840. **Rates:** flat rate, \$5 and upward per dwelling; bath-room, \$2; meter rate, 6c. to 8c. per 1,000 gals. Officer in charge: J. Potts, Town Engineer.

SYDNEY, Cape Breton co., (18,000). In operation since 1893; new reservoir in 1902; owned by city. **Supply:** by gravity from brook, 3 miles distant. **Reservoir:** new storage reservoir, capacity 200,000,000 gal. **Distribution:** 28 miles C. I. mains, 4 in. to 24 in.; 157 hydrants; 2,156 services, $\frac{1}{2}$ in. lead and galvanized iron pipe. **Pressure:** 30 to 87 lbs. **Consumption:** 2,115,672 gal. **Financial:** cost of plant, \$400,000; annual maintenance, \$6,628; revenue, \$33,489. **Rates:** both flat and meter rates; flat rate, \$5 for first tap; bath-room, \$6.50; meter rate, 8c. to 20c. per 1,000 gal. Officer in charge: D. M. Campbell, City Engineer.

SYDNEY MINES, Cape Breton co., (8,000). In operation since 1903; jointly owned by North Sydney, N.S. Steel & Coal Co. and Sydney Mines. **Supply:** from Pottles lake; pumped to reservoir; steam power used; pumps are in duplicate. **Reservoirs:** one, of 1,000,000 gal. capacity for whole system and two for Company at their works. **Distribution:** 14 miles C. I. mains; 93 hydrants; 1,003 services, galvanized iron pipes. **Pressure:** ordinary, 40 to 70 lbs.; fire, 30 to 90 lbs. **Consumption:** 1,600,000 gal. **Financial:** cost of supply plant, \$45,000; cost of distribution system, \$85,000 for town and \$30,000 for N.S.S. & C. Co.; annual maintenance, \$555; revenue, \$7,000. **Rates:** flat rate, \$6 per tap, \$11.50 for tap and bath-room. Officer in charge: J. G. W. Campbell, Town Engineer.

TRURO, Colchester co., (6,100). In operation since 1875; owned by municipality. **Supply:** by gravity from Lepper brook, $1\frac{1}{2}$ mile distant; have an auxiliary steam pumping plant of 300 h.p. capacity pumping direct to mains. **Reservoir:** one, 30,000,000 gal. capacity. **Distribution:** 10 miles C. I. mains, 4 in. to 14 in.; 127 hydrants; 1,050 services, lead and galvanized iron pipe. **Pressure:** ordinary, 85 lbs.; fire, 120 lbs. **Consumption:** 1,500,000 gal. **Financial:** total cost of plant to date, \$250,000; annual maintenance, \$3,500; revenue, \$14,000. **Rates:** flat rate, tap, \$6; bath-room, \$4; meter rate, 5c. to 8c. per 1,000 gals. Officer in charge: G. C. McDowell, Town Engineer.

WESTVILLE, Pictou co., (4,400). In operation since 1895; owned by municipality. **Supply:** pumped to reservoir from Middle river, $1\frac{1}{2}$ mile distant; 45 h.p. steam pump used; boilers and pumps in duplicate.

Filter: gravel and sand filter used. **Reservoir:** one, 1,500,000 gal. capacity. **Distribution:** 14 miles C. I. mains, 4 in. to 10 in.; 52 hydrants; 880 services, $\frac{1}{2}$ in. and $\frac{3}{4}$ in. lead pipe. **Pressure:** ordinary, 75 lbs.; fire, 60 lbs. **Consumption:** 181,205 gal. **Financial:** cost of supply plant, \$20,000; cost of distribution system, \$57,400; annual maintenance, \$6,078; revenue, \$6,826. **Rates:** flat rate, \$6.50 per family; meter rate, 16c. to 50c. per 1,000 gal. Officer in charge: H. Carr, Town Engineer.

WINDSOR, Hants co., (3,000). In operation since 1882; owned by municipality. **Supply:** by gravity from Mill lakes, 8 miles distant. **Reservoirs:** three, two of 5,000,000 gal. each, and one storage reservoir of 700,000,000 gal. **Distribution:** 9 miles of C. I. mains, 4 in. to 10 in.; 66 hydrants; 500 services, lead pipe. **Pressure:** 40 to 85 lbs. **Consumption:** 350,000 gal. **Financial:** total cost of plant, \$80,000; annual maintenance, \$3,500 including interest on debentures; revenue, \$5,000. **Rates:** flat rate based on assessed value, \$4 and upward per dwelling; bath-room, \$3. Officer in charge: F. Mounce, Superintendent.

WOLFVILLE, Kings co., (1,458). In operation since 1890; owned by municipality. **Supply:** by gravity from Duncan brook, 3 miles distant. **Reservoir:** one, capacity, 5,000,000 gal. **Distribution:** 7 miles of C.I. mains, 2 in. to 8 in.; 37 hydrants. **Pressure:** 80 lbs. **Financial:** total cost of plant, \$43,000; annual maintenance, \$2,500, including interest; revenue from consumers, \$2,800; from public uses, \$10. **Rates:** flat rate, \$5 per tap; \$8 per bath-room. Officer in charge: A. C. Johnson, Superintendent.

YARMOUTH, Yarmouth co., (6,600). In operation since 1881; owned by municipality. **Supply:** by gravity from lake George and springs 9 miles distant; pumped into reservoir and mains; 20 h.p. steam pumping plant used; pumps and boilers in duplicate. **Reservoir:** one, capacity, 2,000,000 gal. **Distribution:** 32 miles C. I. mains, 4 in. to 12 in.; 105 hydrants; 1,340 services, lead pipe. **Pressure:** ordinary, 35 to 60 lbs.; fire, 50 to 90 lbs. **Consumption:** 838,785 gal. **Financial:** total cost of plant to date, \$346,843; annual cost of operation, \$3,386; interest on bonds, \$14,280; revenue from consumers, \$19,432; from public uses, \$5,584. **Rates:** flat rate from \$7.50 to \$20 based on number of taps; meter rate for large consumers, 20c per 1,000 gal. Officer in charge: Geo. H. Robertson, Superintendent.

PRINCE EDWARD ISLAND

CHARLOTTETOWN, Queens co., (12,500). In operation since 1888-89; owned by municipality. **Supply:** pumped from wells, near Three-mile brook, to reservoir; steam power used; capacity of pumps, 2,500,000 gal. **Reservoir:** one covered distributing reservoir, 1,250,000 gal. capacity. **Distribution:** 20½ miles of mains, 4 in. to 14 in.; 96 hydrants; 2,250 services, lead and galvanized iron pipe. **Pressure:** 60 lbs. **Consumption:** 732,000 gal. **Financial:** total cost of plant, \$270,000; annual maintenance, \$9,000; interest, \$12,000; revenue, \$25,000. **Rates:** flat rate, \$6 per family; \$8 for bath-room; meter rate, 30c. per 1,000 gal. Officer in charge: Chas. Dalziel, Superintendent.

GEORGETOWN, Kings co., (1,300). In operation since 1904; owned by Prince Edward Island railway. Prince Edward Island railway has a system to supply engines and station; water is supplied by gravity from springs a short distance away. **Distribution:** ¼ mile of 6 in. mains. **Consumption:** 10,000 gal.

SUMMERSIDE, Prince co., (3,000). In operation since 1909; owned by municipality. **Supply:** pumped from artesian wells directly into mains and to stand-pipe; steam power used; maximum, 50 h.p.; average, 35 h.p. **Reservoir:** stand-pipe 366,000 gal. capacity. **Distribution:** 8.1 miles of iron mains; 56 hydrants; 264 services. **Pressure:** ordinary, 70 lbs.; fire, 90 lbs. **Consumption:** 60,000 gal. **Financial:** total cost of plant, \$90,596; annual maintenance, \$2,043; revenue from consumers, \$3,375; from public uses, \$1,290. **Rates:** flat rate, \$6 and upward per dwelling; bath-room, \$8; meter, 30c. per 1,000 gal. Officer in charge: Alf. Groom.



NEW BRUNSWICK

ANDOVER, Victoria co., (500). In operation since 1898; owned by municipality. **Supply:** by gravity from brook, 1 mile distant. **Reservoir:** one, 150,000 gal. capacity. **Distribution:** 2 miles of 6 in. C. I. mains; 20 hydrants; 74 services, $\frac{3}{4}$ in. iron pipe; **Pressure:** 52 lbs. **Consumption:** 20,000 gal. **Financial:** cost of plant, \$11,500; annual maintenance, \$700; revenue, \$700. **Rates:** flat rate, \$5 per family. Water Commission in charge.

CAMPBELLTON, Restigouche co., (5,000). In operation since 1889; owned by municipality. **Supply:** by gravity from springs and brooks, 4 miles distant. **Reservoirs:** two, 2,000,000 and 60,000,000 gal. capacity. **Distribution:** 12 miles C. I. mains, 4 in. to 16 in.; 50 hydrants; 600 services, $\frac{1}{2}$ in. to 1 in. lead pipe. **Pressure:** 85 lbs. **Consumption:** 225,000 gal. **Financial:** cost of plant, \$200,000; annual maintenance (including interest), \$10,000; revenue from consumers, \$6,300; from public uses, \$1,000. **Rates:** flat rate, \$8 per family for first tap; bath-room, \$5. Officer in charge: R. J. Sandover-Sly, Town Engineer.

CHATHAM, Northumberland co., (5,000). In operation since 1901; owned by municipality. **Supply:** pumped directly into mains from brook $3\frac{1}{2}$ miles distant; steam power used, 150 h.p. max., 65 h.p. average; pumps and boilers are in duplicate. **Reservoir:** 1 stand-pipe 480,000 gal. capacity. **Distribution:** $9\frac{1}{2}$ miles C. I. mains, 4 in. to 12 in.; 65 hydrants; 360 services, $\frac{3}{4}$ in. to 2 in. iron pipe. **Pressure:** ordinary, 38 to 71 lbs.; fire, 100 lbs. **Consumption:** 400,000 gal. **Financial:** cost of supply plant, \$22,500; distribution system, \$165,000; annual maintenance (without interest), \$4,500; revenue, \$5,000. **Rates:** flat rate, first tap, \$5; bath-room, \$4. Officer in charge: Alex. N. Mackay, Superintendent of Town Works.

DALHOUSIE, Restigouche co., (1,650). In operation since 1908; owned by municipality. **Supply:** by gravity from brook, $2\frac{1}{2}$ miles distant. **Reservoir:** one, capacity 1,000,000 gal. **Distribution:** 4 miles, 4 in. to 8 in. C. I. mains; 28 hydrants; 170 services, $\frac{1}{2}$ in. to $1\frac{1}{2}$ in. lead pipe; **Pressure:** 80 to 85 lbs. **Financial:** cost of plant, \$65,000; annual maintenance, \$200; revenue, \$2,000. **Rates:** flat rate, \$10 per dwelling. Officer in charge: William A. Gallop, Water Superintendent.

FREDERICTON, York co., (7,208). In operation since 1883; owned by municipality. **Supply:** pumped from St. John river, about one mile

distant, through filtration system, into mains. Steam power used; pumps and station appliances are in duplicate. **Filter:** mechanical rapid sand used. **Reservoir:** one of 391,500 gal. capacity. **Distribution:** 13½ miles C. I. mains, 3 in. to 14 in.; 106 hydrants; 1288 services, ¾ in. to 2 in. lead and galvanized iron pipe. **Pressure:** ordinary, 40 lbs.; fire, 85 to 90 lbs. **Consumption:** 529,500 gal. **Financial:** total cost of plant to date, \$223,141; annual maintenance, \$16,700; interest, \$9,050; revenue from consumers, \$15,200; from public uses, \$2,200; from direct taxation, \$7,200. **Rates:** flat rate, \$5 for first tap; bath-room, \$8; meter rate, 10c. to 25c. per 1000 gal. Officer in charge: John L. Feeney.

GIBSON, York co., (630). In operation since 1906; owned by municipality. **Supply:** pumped from well, 1½ mile distant; wind power used with steam auxiliary. **Reservoir:** one, 280,000 gal. capacity. **Distribution:** 2 miles C. I. mains, 4 in. to 8 in.; 17 hydrants; 140 services, ¾ in. lead and iron pipe. **Pressure:** 68 lbs. **Consumption:** 500,000 gal. **Financial:** cost of supply plant, \$6,000; distribution system, \$15,900; annual maintenance, \$350; revenue, \$700. **Rates:** flat rate, \$5 per tap. Board of Commissioners in charge.

HARTLAND, Carleton co., (500). In operation since 1895; owned by municipality. **Supply:** by gravity from springs ¼ mile distant, with auxiliary pumping from another spring. **Reservoir:** one, 106,000 gal. capacity. **Distribution:** ¾ mile C. I. mains, 4 in. to 6 in.; 11 hydrants; 80 services, ½ in. galvanized iron pipe. **Pressure:** 50 lbs. **Consumption:** 16,000 gal. **Financial:** total cost of plant, \$13,500; annual maintenance, \$800; revenue, \$360. **Rates:** flat rate, \$3 for dwelling to \$15 for hotels. Officer in charge: A. W. Rideout, Secretary-Treasurer.

MILLTOWN, Charlotte co., (1,804). In operation since 1886, owned by the Maine Water Co., supplied from St. Stephen. **Supply:** pumped into reservoirs from wells about 6 miles distant; gas power used; pumping appliances in duplicate. **Reservoirs:** one in Milltown, 1,000,000 gal. capacity, and one in St. Stephen, 2,500,000 gal. capacity. **Distribution:** 4 miles of C. I. pipe, 6 in. to 12 in.; 33 hydrants; 288 services, ¾ in. galvanized iron pipe. **Pressure:** 100 lbs. **Consumption:** 20,000 gal. **Financial:** annual revenue, \$1,600. **Rates:** flat rate, \$7 per family. Officer in charge: I. R. Bradley, Superintendent.

MONCTON, Westmorland co., (13,000). In operation since 1879; owned by municipality. **Supply:** pumped directly into mains from two impounding reservoirs supplied from brook, 4 miles distant; steam and electric power used; average h.p., 75. **Reservoirs:** two, 220,000,000

gal. and 10,000,000 gal. capacity. **Distribution:** 25 miles C. I. mains, 3 in. to 20 in.; 98 hydrants; 1868 services, $\frac{1}{2}$ in. to 4 in. lead and galvanized iron pipe. **Pressure:** ordinary, 20 to 40 lbs. **Consumption:** 2,000,000 gals. **Financial:** total cost of plant, \$377,398; annual maintenance, \$15,116; revenue, \$51,577. **Rates:** flat rate \$10 to \$17 per dwelling; meter rate, 10c. per 1,000 gal. Officer in charge: J. Edington.

NEWCASTLE, Northumberland co., (3,500). In operation since 1904; owned by municipality. **Supply:** pumped from artesian wells either into reservoir or directly into mains; steam power used. **Reservoir:** one, 125,000 gal. capacity. **Distribution:** 7 miles C. I. mains; 27 hydrants; 250 services, galvanized iron and lead pipe. **Pressure:** ordinary, 85 lbs.; fire, 125 to 150 lbs. **Consumption:** 100,000 gal. **Financial:** total cost of plant, \$100,000; annual maintenance, \$3,500; revenue from consumers, \$3,000; from public uses, \$1,000. **Rates:** flat rate, \$8 for first tap; bath-room, \$14. Officer in charge: J. W. Murray, Engineer.

PERTH, Victoria co., (500). In operation since 1902; owned by municipality. **Supply:** by gravity from brook, $1\frac{1}{2}$ mile distant, and spring, $\frac{1}{2}$ mile distant. **Reservoir:** one, 440,000 gal. capacity. **Distribution:** one mile of C. I. mains, 6 in.; 10 hydrants; 80 services, $\frac{3}{4}$ in. galvanized iron pipe. **Pressure:** 55 to 60 lbs. **Financial:** total cost of plant, \$10,000; annual maintenance, \$50; revenue, \$800. **Rates:** flat rate on assessment basis.

ST. ANDREWS, Charlotte co. In operation since 1911; owned by Can. Pac. Ry. in connection with hotel; to be extended to the town. **Supply:** from Chamcook lake, 5 miles distant.

ST. JOHN, St. John co., (48,000). In operation since 1837; owned by municipality. **Supply:** by gravity from Loch Lomond and Spruce lake, 10 and 5 miles distant, respectively. **Reservoirs:** Loch Lomond, 2,480 acres; lake Robertson, 28 acres; lake Latimer, 200 acres; Little river, 55 acres; Spruce lake, 1,000 acres. **Distribution:** 83 miles of concrete conduits, wood stave pipe and C. I. pipe 2 in. to 48 in.; 420 hydrants; 6,473 services, lead pipe. **Pressure:** 20 to 90 lbs. **Consumption:** 10,000,000 gal. **Financial:** total cost of plant, \$2,000,000; annual maintenance, \$44,000; interest and sinking fund, \$112,000; annual revenue, \$182,000. **Rates:** flat rate, \$3 per family, bath-room, \$7; meter rate, 10c. per 1000 gal. Officer in charge: William Murdoch, City Engineer.

ST. MARYS, York co., (890). In operation since 1908; owned by municipality. **Supply:** pumped into reservoir from wells, $\frac{3}{4}$ mile distant;

wind power used with steam auxiliary. **Reservoir:** one, 200,000 gal. capacity. **Distribution:** 2 miles cast iron pipe, 4 in. to 8 in.; 21 hydrants; 116 services, $\frac{3}{4}$ in. galvanized iron pipe. **Pressure:** 63 lbs. **Consumption:** 8,000 gal. **Financial:** total cost of plant, \$25,000; annual maintenance, (including interest) \$1,500; annual revenue, \$575. **Rates:** flat rate, \$5 per tap; bath-room, \$14. Officer in charge: Wm. Jaffrey, Secretary of Water Commissioners.

ST. STEPHEN, Charlotte co., (3,000). In operation since 1908; owned by municipality. **Supply:** for supply system see under Milltown, which is supplied from this system. **Distribution:** 14 miles C. I. mains, 6 in. to 16 in.: 54 hydrants; 670 services galvanized iron pipe. **Pressure:** 120 lbs. **Consumption:** 475,000 gal. **Financial:** total cost of plant \$184,000; annual maintenance \$7,000; revenue \$19,000. **Rates:** flat rate, \$7 per dwelling; bath-room \$10. Officer in charge: A. A. Lafin.

WOODSTOCK, Carleton co., (3,856). In operation since 1882; owned by municipality. **Supply:** pumped from St. John river $\frac{1}{2}$ mile distant, to stand-pipe, thence by gravity, or directly into mains; electric power used, maximum 100 h.p., average, 50 h.p.; apparatus in duplicate. **Reservoir:** one stand-pipe, 287,000 gal. **Distribution:** 6 miles C. I. mains, 4 in. to 10 in.: 80 hydrants; 800 services, galvanized iron. **Pressure:** ordinary, 60 lbs; fire, 85 lbs. **Consumption:** 320,000 gal. **Financial:** cost of supply plant, \$35,000; distribution system, \$80,000; annual maintenance, \$4,000; revenue from consumers, \$6,000; from public uses, \$1,000. **Rates:** flat rate, \$6 and upward per dwelling; bath-room \$6.50; meter, 25c. per 1000 gal. Officer in charge: A. G. Fields, Superintendent.



QUEBEC

ACTIONVALE, Bagot co., (1,500). In operation since 1880; owned by private company. **Supply:** pumped from Moose river to reservoir; water and steam power used, average, 15 h.p. **Reservoir:** one of 41,000 gal. capacity. **Distribution:** 3 miles C. I. mains, 2 in. to 5 in.; 15 hydrants; 180 services, $\frac{3}{4}$ in. and 1 in. galvanized iron pipe. **Pressure:** ordinary, 60 lbs.; fire, 100 lbs. **Consumption:** town, 65,000 gal.; G.T. Ry., 60,000 gal. **Financial:** cost of plant, \$23,000; annual maintenance, \$600; revenue, \$2,650. **Rates:** flat rate, \$6 to \$8 per tap; bath-room \$4. Officer in charge: J. A. Vincent, President.

AYLMER, Wright co., (3,205). In operation since 1895; owned by municipality. **Supply:** pumped from lake Deschênes into reservoir; steam power used; 2 pumps, 1,200,000 gal. capacity. **Reservoir:** one, 60,000 gal. capacity. **Distribution:** 5 miles of mains, 4 in. to 8 in.; 33 hydrants; 500 services, lead pipe. **Pressure:** ordinary, 68 lbs.; fire, 130 lbs. **Consumption:** 240,000 gal. **Financial:** total cost of plant, \$52,600; annual maintenance, \$3,550; revenue, \$6,000. **Rates:** flat rate, \$6 to \$26 per dwelling; bath-room, \$6; meter rate, 30c. per 1000 gal. Officer in charge: J. G. McDermott, Secretary-treasurer.

BEAUHARNOIS, Beauharnois co., (2,000). In operation since 1890; owned by municipality. **Supply:** pumped from lake St. Louis, 1,900 ft. distant, to stand-pipe; steam power used, 80 h.p.; pumps and boilers in duplicate. **Distribution:** 3.2 miles of C. I. mains, 4 in. to 8 in.; 32 hydrants; 500 services; lead and galvanized iron pipes. **Pressure:** ordinary, 48 lbs.; fire, 90 lbs. **Consumption:** 150,000 gal. **Financial:** total cost of plant, \$65,000; annual maintenance, \$5,000; revenue, \$10,000. **Rates:** flat rate, varying with number of taps.

BEEBE PLAIN, Stanstead co., (700). In operation since 1894; owned by municipality. **Supply:** by gravity from springs, 2 miles distant. **Reservoirs:** two, 470,000 gal. and 280,000 gal. capacity. **Distribution:** 3 miles of C. I. mains, 4 in. to 8 in.; 15 hydrants; 125 services. **Pressure:** 70 lbs. **Financial:** cost of supply plant, \$16,000; cost of distribution system, \$4,000; annual maintenance, \$500; revenue, \$1,600. **Rates:** flat rate, \$8 per family; \$5 for bath-room. Officer in charge: William J. Johnston, Superintendent.

BERTHIERVILLE, Berthier co., (1,300). In operation since 1879; owned by municipality. **Supply:** pumped from St. Lawrence river, 400 feet distant

to reservoir; steam power used, 80 h.p.; pumps in duplicate. **Distribution:** 5 miles of C. I. and W. I. mains, 2 in. to 5 in.; 19 hydrants; 335 services. **Pressure:** ordinary, 20 lbs.; fire, 60 to 100 lbs. **Consumption:** 100,000 gal. **Financial:** total cost of plant, \$22,000; annual maintenance, \$1,375; revenue from consumers, \$3,600; from public uses, \$60. **Rates:** flat rate on assessment basis. Officer in charge: J. G. Coutu, Superintendent.

BIENVILLE, Lévis co., (800). In operation since 1909; owned by municipality. **Supply:** by gravity from springs, 800 feet distant, to reservoirs. **Reservoirs:** three, 54,000 gal., 284,000 gal., and 670,000 gal. capacity. **Distribution:** 2 miles of C. I. and W. I. mains, 2 in. to 6 in.; 9 hydrants; 150 services. **Pressure:** ordinary, 30 to 45 lbs.; fire, 75 lbs. **Financial:** total cost of plant, \$24,000; annual revenue, \$1,450. **Rates:** flat rate, \$7.80 per dwelling. Officer in charge: Adélard Lévesque.

BUCKINGHAM, Labelle co., (4,500). In operation since 1892; owned by municipality. **Supply:** pumped from Lièvre river, at the town, directly into mains; water-power used, average, 125 h.p. **Distribution:** 6½ miles of C. I. mains, 4 in. to 12 in.; 75 hydrants; 650 services, lead pipe. **Pressure:** ordinary, 65 lbs.; fire, 90 lbs. **Consumption:** 1,000,000 gal. **Financial:** total cost of plant, \$75,000; annual maintenance, \$1,000; revenue, \$8,000. **Rates:** flat rate on assessment basis, 14½c. per \$100. Officer in charge: F. Fournier.

CAP ST. IGNACE, Montmagny co., (4,000). In operation since 1904; owned by "Compagnie d'Aqueduc du Cap St. Ignace." **Supply:** by gravity from springs, 4½ miles distant. **Reservoirs:** two, one small, and the other of 1,500,000 gal. capacity. **Distribution:** 5½ miles of C. I. mains, 4 in. to 8 in.; 10 hydrants; 135 services, ½ in. galvanized iron pipe. **Pressure:** ordinary, 90 lbs.; fire, 125 to 140 lbs. **Financial:** total cost of plant, \$40,000; annual maintenance (exclusive of interest), \$200; revenue from consumers, \$1,200; from public uses, \$600. **Rates:** flat rate on assessment basis, from \$6 to \$12 per dwelling. Officer in charge: L. Bernier, Secretary-Treasurer.

CEDARS, Soulange co., (235). In operation since 1909; owned by private company. **Supply:** pumped from St. Lawrence river, 350 feet distant, to eight small reservoirs; capacity of pumps, 3 h.p. **Distribution:** ½ mile, galvanized iron pipe, 1½ in. and 1¾ in.; 22 consumers. **Consumption:** 1,600 gal. **Financial:** total cost of plant, \$800; annual maintenance, \$25; revenue, \$132. **Rates:** flat rate, \$6 per family. Officer in charge: A. M. Bissonnette.

CHAMBLY BASIN, Chambly co., (1,000). In operation since 1896; owned by municipality (in common with Chambly Canton). **Supply:** pumped from Richelieu river, $\frac{1}{2}$ mile distant from Chambly Canton, directly into mains; steam and electric power used, 20 h.p. **Distribution:** 3 miles of mains, 4 in. and 6 in.; 30 hydrants; 200 services, lead pipe. **Pressure:** ordinary, 30 lbs.; fire, 100 lbs. **Financial:** cost of plant, \$17,500; annual maintenance, \$1,500; revenue, \$1,300. **Rates:** flat rate, \$6 per tap.

CHAMBLY CANTON, Chambly co., (1,000). In operation since 1897; owned by municipality. **Supply:** (see Chambly Basin). **Distribution:** 3 miles of C. I. mains, 4 in. to 8 in.; 17 hydrants; 210 services, $\frac{1}{2}$ in. lead pipe. **Pressure:** ordinary, 35 to 40 lbs.; fire, 78 to 100 lbs. **Financial:** cost of plant, (see Chambly Basin); annual maintenance, \$200; revenue, \$1,550. **Rates:** flat rate on assessment basis, \$6 to \$28 per dwelling.

CHICOUTIMI, Chicoutimi co., (5,500). In operation since 1893; owned by "La Cie. des Eaux de Chicoutimi." **Supply:** by gravity from Chicoutimi river, $1\frac{1}{2}$ mile distant. **Distribution:** 5 miles of C. I. mains, 3 in. to 10 in.; 45 hydrants; 700 services, $\frac{1}{2}$ in. galvanized iron and lead pipe. **Pressure:** 70 lbs. **Financial:** total cost of plant, \$110,000; annual maintenance (exclusive of interest), \$300; revenue from consumers, \$9,500; from public uses, \$650. **Rates:** flat rate, \$8 per family. Officer in charge: L. A. Casgrain, Manager.

COATICOOK, Stanstead co., (3,000). In operation since 1880; owned by Coaticook Water Co. **Supply:** by gravity from springs flowing into three reservoirs, 1 mile distant. **Reservoirs:** three, 40 ft. x 80 ft.; 15 ft. x 15 ft.; and 24 ft. x 24 ft. **Distribution:** 3 miles of C. I. and W. I. mains, 3 in. to 8 in.; 18 hydrants; 425 services, $\frac{1}{2}$ in. iron pipes. **Pressure:** 80 to 100 lbs. **Consumption:** 200,000 gal. **Financial:** cost of supply plant, \$10,000; cost of distribution system, \$50,000; annual maintenance, \$1,500; revenue from consumers, \$5,000; from public uses, \$500. **Rates:** flat rate, \$6 to \$15 per family. Officer in charge: D. Moyle.

COOKSHIRE, Compton co., (1,000). In operation since 1893; owned by municipality. **Supply:** by gravity from springs, 2 miles distant; also an emergency plant to pump water from river (not often used). **Reservoir:** one, 488,000 gal. capacity. **Distribution:** 4 miles of C.I. mains, 3 in. to 10 in.; 36 hydrants; 152 services, $\frac{1}{2}$ in. pipe. **Pressure:** 45 to 130 lbs. **Financial:** total cost of plant, \$44,700; annual maintenance, \$600; revenue, \$1,600. **Rates:** flat rate, \$6 for first tap and \$6 for bath-room. Officer in charge: E. S. Baker, Secretary-treasurer.

COWANSVILLE, Missisquoi co., (880). In operation since 1897; owned by municipality. **Supply:** by gravity from springs, 2 miles distant; also has an emergency steam plant to pump water from river. **Reservoir:** one, 200,000 gal. capacity. **Distribution:** 7 miles of C. I. mains, 4 in. to 12 in.; 40 hydrants; 150 services, lead and galvanized iron pipes. **Pressure:** 76 lbs. **Consumption:** 40,000 gal. **Financial:** total cost of plant, \$20,000; annual maintenance, including interest, \$1,500; revenue, \$1,500. **Rates:** flat rate, \$6 per tap; \$6 per bath-room. Officer in charge: James O. Dean, Inspector.

DANVILLE, Richmond co., (1,350). In operation since 1908; owned by Danville Water Co. **Supply:** pumped from brook which is fed by numerous springs, $2\frac{1}{2}$ miles distant, directly into mains and reservoir; water-power used, maximum, 20 h.p., average, 12 h.p. **Filter:** sand and gravel filter used. **Reservoir:** one, 70,000 gal. capacity. **Distribution:** $5\frac{1}{2}$ miles of C. I. mains, 4 in. and 6 in.; 30 hydrants; 200 services, $\frac{1}{2}$ in. and 1 in. galvanized iron pipe. **Pressure:** 25 to 100 lbs. **Consumption:** 30,000 gal. **Financial:** cost of supply plant, \$6,000; cost of distribution system, \$36,000; annual maintenance, \$400; revenue from consumers, \$2,500; from public uses, \$550. **Rates:** flat rate, \$8 and upward per dwelling; bath-room, \$7; meter rate, 12c. to 30c. per 1,000 gal. Officer in charge: Aimé Chagnon.

DIXVILLE, Stanstead co., (500). In operation since 1906; owned by Dixville Water Works Co. **Supply:** by gravity from springs, 1,000 feet distant on west side of river and a separate system by gravity from springs on east side of river. **Reservoirs:** two, 1,600 and 6,500 gal. capacity. **Distribution:** $1\frac{1}{2}$ mile of $1\frac{1}{2}$ in. galvanized iron pipe; 30 services. **Pressure:** 20 lbs. on west side and 250 lbs. on east side. **Financial:** total cost of plant, \$900; annual maintenance, \$15; annual revenue, \$200. **Rates:** flat rate, \$6 for first tap, \$4 for additional. Officer in charge: William L. Gilson.

DORION and VAUDREUIL, Vaudreuil co., total population, 1,000. In operation since 1897; owned by both municipalities. **Supply:** by gravity from springs, 8 miles distant. **Reservoir:** one, 47,000 gal. capacity. **Distribution:** 8 miles of C. I. mains, 3 in. to 8 in.; 9 hydrants in Vaudreuil; 100 services in Dorion and 100 in Vaudreuil. **Pressure:** 25 to 40 lbs. **Financial:** total cost of plant, \$50,000; annual maintenance, \$50; revenue, \$1,300 for Dorion, and \$950 for Vaudreuil. **Rates:** In Dorion, flat rate on assessment basis; \$6 and upward, plus 40c. per \$100; in Vaudreuil, flat rate, \$8 per year, plus $\frac{1}{4}$ of one per cent. on assessment.

DRUMMONDVILLE, Drummond co., (2,500). In operation since 1896; owned by municipality. **Supply:** pumped from St. Francis river, $\frac{1}{2}$ mile

distant, directly into mains; water-power used, maximum, 80 h.p., average, 40 h.p. **Distribution:** 4 miles of C. I. mains, 4 in. and 6 in.; 30 hydrants; 400 services. **Pressure:** ordinary, 50 lbs.; fire, 125 lbs. **Financial:** cost of supply plant, \$50,000; cost of distribution system, \$15,000; annual maintenance, \$600; revenue, \$4,500. **Rates:** flat rate, \$7.50 per dwelling. Officer in charge: Jos. Desrosiers.

EASTMAN, Brome co., (625). In operation since 1880. Extensions made in 1907 and 1909. Privately owned. **Supply:** by gravity from springs, $\frac{1}{2}$ mile distant. **Reservoirs:** three small reservoirs. **Distribution:** $\frac{1}{2}$ mile galvanized iron mains, 3 in.; 30 services. **Financial:** total cost of plant, \$1,000; annual revenue, \$375. Officer in charge: J. A. Moquin.

FARNHAM, Missisquoi co., (4,000). In operation since 1892; owned by municipality. **Supply:** pumped from Yamaska river, near centre of town, directly into mains; electric power used, maximum, 100 h.p., average, 30 h.p.; steam pump as an auxiliary being installed. **Distribution:** 7 miles of C. I. and W. I. mains, 2 in. to 10 in.; 46 hydrants; 870 services, $\frac{1}{2}$ in. lead pipe. **Pressure:** ordinary, 65 lbs.; fire, 130 lbs. **Consumption:** 800,000 gal. **Financial:** cost of supply plant, \$35,000; cost of distribution system, \$90,000; annual maintenance, \$1,500; interest, \$1,500; revenue from consumers, \$9,500. **Rates:** flat rate, \$6 to \$8 per dwelling based on assessment. Officer in charge: W. F. Girard, Superintendent.

FRASERVILLE, Temiscouata co., (8,000). In operation since 1897; owned by municipality. **Supply:** by gravity from lake Hickson and Green river, 8 miles distant; an emergency steam pumping station of 30 h.p. capacity. **Reservoirs:** one, 310,000 gal. capacity and one stand-pipe, 88,000 gal. capacity. **Distribution:** 23 miles of C. I. mains, 4 in. to 24 in.; 117 hydrants; 1,425 services, $\frac{1}{2}$ in. to $1\frac{1}{2}$ in. lead pipe. **Pressure:** 15 to 125 lbs. **Consumption:** 800,000 gal. **Financial:** cost of supply plant, \$175,000; cost of distribution system, \$250,000; annual maintenance, \$3,500; revenue, \$2,500. **Rates:** flat rate, \$7 to \$20 per dwelling; meter rate, $7\frac{1}{2}$ c. to 10c. per 1,000 gal. Officer in charge: Georges Ouimet, City Engineer.

GATINEAU POINT, Wright co., (1,700). In operation since 1901; owned by municipality. **Supply:** pumped from Gatineau river to reservoir; electric power used, $7\frac{1}{2}$ h.p. **Reservoir:** one, 35,000 gal. capacity. **Distribution:** 3 miles of C. I. mains, 2 in. to 6 in.; 11 hydrants; 290 services, $\frac{1}{2}$ in. lead pipe. **Pressure:** ordinary, 40 lbs.; fire, 80 to 100 lbs. **Con-**

sumption: 25,000 gal. **Financial:** total cost of plant, \$30,000; annual maintenance, \$1,900; revenue, \$4,000. **Rates:** flat rate, \$8 per dwelling. Officer in charge: Ernest Charette, Superintendent.

GRANBY, Shefford co., (5,000). In operation since 1897; owned by municipality. **Supply:** by gravity from Shefford Mountain lake, 5 miles distant. **Reservoir:** one, 100 feet x 100 feet. **Distribution:** 6 miles of W. I. mains, 4 in. to 6 in.; 50 hydrants; 1500 services, lead pipe. **Pressure:** ordinary, 70 lbs.; fire, 70 to 100 lbs. **Financial:** total cost of plant, \$100,000; annual maintenance, \$1,000; revenue, \$11,000;. **Rates:** \$6 to \$10 per consumer; meter rate, 15c. to 18c. per 1000 gal. Officer in charge: W. D. Bradford, President of Committee.

GRAND'MERE, Champlain co., (5,500).—In operation since 1899; owned by municipality. **Supply:** by gravity from a lake, 6½ miles distant. **Reservoir:** one, small. **Filter:** charcoal filter used with good results. **Distribution:** 7 miles of C. I. mains, 8 in. and 10 in.; 32 hydrants; 600 services, lead and iron pipes. **Financial:** cost of supply plant, \$65,000; cost of distribution system, \$10,000; annual maintenance, \$1,200; revenue from consumers, \$11,000; from public uses, \$1,000. **Rates:** flat rate, \$8 per tap. Officer in charge: Louis Frenette.

HUDSON, Vaudreuil co., (1,000). In operation since 1907; owned by Hudson Water-Works Co. **Supply:** by gravity from springs, one mile distant. **Reservoir:** one, 30 ft. x 50 ft. **Distribution:** 2 miles wooden pipe, 4 in. and 8 in.; 8 hydrants (not used); 125 services. **Financial:** annual revenue, \$1,000. **Rates:** flat rate, \$8 to \$25 per dwelling. Officer in charge: J. H. McNaughton.

HULL, Wright co., (16,600). In operation since 1886; hydraulic plant installed in 1905: owned by municipality. **Supply:** pumped from Ottawa river above Chaudière falls, ½ mile distant, directly into mains; water-power used, 255 h.p.; has a steam auxiliary plant. **Distribution:** 19 miles of mains, 3 in. to 20 in.; 175 hydrants; 3,200 services, ½ in. to 2 in. lead pipe. **Pressure:** ordinary, 60 lbs.; fire. 90 lbs. **Consumption:** 3,500,000 gal. **Financial:** total cost of plant, \$688,000; annual maintenance, \$9,000; interest, \$34,400; annual revenue, \$50,000. **Rates:** flat rate on assessment basis, ½ of one per cent. and upward; meter rate, 15c. per 1000 gal. Officer in charge: J. P. A. Laforest, City Engineer.

HUNTINGDON, Huntingdon co., (1,300). In operation since 1896; owned by municipality. **Supply:** pumped from Chateauguay river, ¾ mile distant, into tank, or directly into mains; steam power used; boilers

and pumps in duplicate. **Filter:** charcoal filter used with good results. **Reservoir:** one, 60,000 gal. capacity. **Distribution:** 4½ miles of mains; 36 hydrants; 320 services, iron and lead pipe. **Pressure:** ordinary, 35 lbs.; fire, 100 lbs. **Consumption:** 75,000 gal. **Financial:** total cost of plant, \$80,000; annual maintenance, \$2,000; revenue, \$3,000. **Rates:** flat rate on assessment basis, \$5 to \$10 per dwelling. Officer in charge: W. K. Philips.

IBERVILLE, Iberville co., (2,000). In operation since 1883; owned by municipality. **Supply:** pumped from Richelieu river, 400 feet distant, directly into mains; steam power used, average, 40 h.p.; pumps are in duplicate. **Distribution:** 6 miles of C. I. mains, 4 in. to 8 in.; 50 hydrants; 450 services. **Pressure:** ordinary, 70 lbs.; fire, 125 lbs. **Consumption:** 100,000 gal. **Financial:** cost of supply plant, \$50,000; cost of distribution system, \$50,000; annual maintenance, \$2,500; revenue, \$5,000. **Rates:** flat rate, \$6 per year plus $\frac{1}{4}$ of one per cent. on assessment. Officer in charge: John Goyette.

JOLIETTE, Joliette co., (6,700). In operation since 1881; owned by municipality. **Supply:** pumped from L'Assomption river directly into mains; water-power used, maximum, 100 h.p., average, 40 h.p.; has auxiliary electric and steam pumping plants for emergency. **Distribution:** 8 miles of C. I. mains, 3 in. to 8 in.; 89 hydrants; 1429 services, $\frac{1}{2}$ and $\frac{3}{4}$ in. lead pipe. **Pressure:** ordinary, 50 lbs.; fire, 120 lbs. **Consumption:** 1,000,000 gal. **Financial:** total cost of plant, \$100,000; annual maintenance, \$2,700; revenue, \$12,000. **Rates:** flat rate from \$5 per dwelling; \$3 per bath-room. Officer in charge: Pierre Laforest, Superintendent.

KNOWLTON, Brome co., (1,000). In operation since 1895; owned by municipality. **Supply:** by gravity from springs and brook, 1½ mile distant. **Filter:** gravel filter used for water from brook. **Reservoirs:** two, 100 ft. x 100 ft. and 100 ft. x 50 ft. **Distribution:** 7 miles of C. I. and W. I. mains, 2 in. to 8 in.; 27 hydrants; 200 services, $\frac{1}{2}$ in. to 1 in., mostly iron pipe. **Pressure:** ordinary, 85 lbs.; fire, 90 lbs. **Financial:** cost of supply plant, \$23,000; cost of distribution system, \$17,000; annual maintenance, \$200; revenue, \$2,300. **Rates:** flat rate, \$8 per dwelling; \$6 for bath-room. Officer in charge: S. N. Courtney, Superintendent.

LACHINE, Jacques-Cartier co., (10,000). In operation since 1890; owned by municipality. **Supply:** pumped directly into mains from lake St. Louis at two places, 450 feet and 70 feet distant; steam and electric power used, maximum, 450 h.p., average, 125 h.p.; pumps and engines are in duplicate. **Distribution:** 16½ miles of C. I. mains, 4 in. to 14 in.; 135 hy-

drants; 1200 services, $\frac{1}{2}$ in. lead pipe; 2400 consumers. **Pressure:** ordinary, 65 lbs.; fire, 90 lbs. **Consumption:** 2,500,000 gal. **Financial:** total cost of plant, \$265,000; annual maintenance, \$4,000; revenue, \$26,000. **Rates:** flat rate, 6 per cent. on annual rental; meter rate: 5c. to 15c. per 1000 gal. Officer in charge: D. Leclaire.

LACHUTE, Argenteuil co., (2,500). In operation since 1896; municipally owned since 1911. **Supply:** by gravity from McOuat brook, 3 miles distant. **Distribution:** 10 miles of iron pipe, 3 in. to 8 in.; 2 hydrants; 432 services, $\frac{1}{2}$ in. lead pipe. **Pressure:** 35 lbs. **Financial:** total cost of plant, \$60,000; annual maintenance, \$400; revenue, \$4,200. **Rates:** from \$6 per dwelling on assessment. Officer in charge: R. McArthur.

LA PATRIE, Compton co., (1,200). In operation since 1902; two systems privately owned. **Supply:** by gravity from springs, 1,800 feet distant. **Distribution:** 1½ mile of W. I. mains, 1 in. to 4 in.; 35 services. **Pressure:** 15 to 40 lbs. **Financial:** total cost of both plants, \$3,500; revenue, \$400. **Rates:** flat rate, \$6 to \$12 per dwelling. Owners: D. Hallé and A. W. Girard.

LAPRAIRIE, Laprairie co., (2,000). In operation since 1905; privately owned. **Supply:** pumped from St. Lawrence river, 1,200 feet distant, to reservoir; steam power used, 25 h.p. **Reservoir:** one, 49,000 gal. capacity. **Distribution:** 5½ miles of C.I. mains, 4 in. to 6 in.; 13 hydrants; 390 services. **Pressure:** 40 lbs. **Rates:** flat rate, \$6.50 and upward per dwelling; bath-room, \$3; meter rate 17c. per 1000 gal. Owned by A. A. Demers.

LAURENTIDES, L'Assomption co., (1,100). In operation since 1894; owned by municipality. **Supply:** pumped from L'Achigan river, 1,500 feet distant to reservoir; steam power used, 40 h.p. to 50 h.p.; boilers and pumps are in duplicate. **Distribution:** 2 miles of C. I. and W. I mains, 2 in. to 6 in.; 17 hydrants; 300 services, galvanized iron pipe. **Pressure:** ordinary, 20 lbs.; fire, 35 lbs. **Consumption:** 60,000 gal. **Financial:** cost of plant, \$20,000; annual maintenance, \$1,500; revenue from consumers, \$3,000; from public uses, \$200. **Rates:** flat rate, \$6 per dwelling. Officer in charge: Isidore Brossard.

LAUZON, Lévis co., (3,800). In operation since 1908; privately owned. **Supply:** partly by gravity and partly pumped from springs, $\frac{1}{2}$ mile distant. **Reservoirs:** two, total capacity 400,000 gal. **Distribution:** 2½ miles of C. I. mains, 6 in.; 14 hydrants; 250 services, $\frac{1}{2}$ in. to 1 in. galvanized iron. **Pressure:** ordinary, 150 lbs.; fire, 225 to 275 lbs. **Consumption:** 60,000 gal. **Financial:** total cost of plant, \$45,000;

annual maintenance, \$1,500; total revenue, \$3,000. **Rates:** flat rate, \$7 per dwelling. Owned by Ed. Ruel.

LECLERCVILLE, Lotbinière co., (550). In operation since 1889; privately owned. **Supply:** by gravity from a spring, 800 feet distant. **Reservoirs:** two, 24 ft. x 12 ft. and 12 ft. x 12 ft. **Distribution:** 1 mile of W. I. mains; one hydrant; 53 services, $\frac{3}{4}$ in. galvanized iron. **Pressure:** 40 lbs. **Consumption:** 1,200 gal. **Financial:** total cost of plant, \$2,000; annual maintenance, \$25; revenue from consumers, \$250; from public uses, \$18. **Rates:** flat rate, \$5 per dwelling. Owned by N. Beaudet.

LENNOXVILLE, Sherbrooke co., (1,500). In operation since 1898; owned by Lennoxville Water-Works Co. **Supply:** by gravity from spring, 1 mile distant; has an auxiliary electric and steam plant to pump water from St. Francis river. **Reservoirs:** two, 5,000 gal. and 450,000 gal. capacity. **Distribution:** 3 miles of C. I. mains, 4 in. to 8 in.; 23 hydrants; 300 services, $\frac{1}{2}$ in. pipe. **Pressure:** ordinary, 80 lbs.; fire, 70 lbs. **Consumption:** 150,000 gal. **Financial:** cost of supply plant, \$6,000; cost of distribution system, \$34,000; annual maintenance, \$1,800; revenue from consumers, \$3,000; from public uses, \$345. **Rates:** flat rate, \$8 for first tap and \$3 for additional; \$4 for bath-room. Officer in charge: W. W. Baker, Local Manager.

LEVIS, Lévis co., (7,600). In operation since 1906; owned by municipality. **Supply:** pumped to reservoir from St. Lawrence river, 450 feet distant; electric power used, 150 h.p. **Reservoir:** one, 100,000 gal. capacity. **Distribution:** 12 miles of C. I. mains, 4 in. to 12 in.; 107 hydrants; 882 services, $\frac{3}{4}$ in. galvanized iron pipe. **Pressure:** ordinary, 135 lbs.; fire, 175 lbs. **Consumption:** 700,000 gal. **Financial:** total cost of plant, \$298,000; annual maintenance, \$8,000; revenue from consumers, \$26,000; from public uses, \$1,200. **Rates:** flat rate, 15 per cent. on rental value. Officer in charge: F. Desrochers.

LIMOILOU, Quebec co., (now part of Quebec city, which see).

LONGUEUIL, Chambly co., (2,900). In operation since 1876; owned by municipality. **Supply:** pumped from St. Lawrence through filter directly into mains; steam and electric power used; total capacity of pumps, 3,000,000 gal. **Reservoir:** one, 80,000 gal. capacity. **Filter:** 400,000 gal. capacity. **Distribution:** 11 miles of mains, 4 in. to 8 in.; 58 hydrants; 900 services, lead pipe. **Pressure:** ordinary, 55 lbs.; fire, 80 lbs. **Consumption:** 450,000 gal. **Financial:** total cost of plant, \$150,000; annual maintenance, \$4,000; revenue, \$8,000. **Rates:** on assessment basis, 10 per cent. of rental value.

LORETTE (INDIAN), Quebec co., (1,500). In operation since 1907; owned by "La Compagnie d'Aqueduc de la Jeune Lorette." **Supply:** by gravity from a lake, $\frac{3}{4}$ mile distant. **Filter:** gravel filter used with good results. **Reservoir:** one, 33,000 gal. capacity. **Distribution:** 6 miles of C. I. and W. I. mains, 2 in. to 6 in.; 13 hydrants; 200 services. **Pressure:** 40 lbs. **Financial:** total cost of plant, \$22,000; annual maintenance, \$200; revenue, \$1,300. **Rates:** flat rate, \$6 per dwelling; bath-room, \$2.00.

LOUISEVILLE, Maskinonge co., (2,000). In operation since 1882; owned by "Compagnie d'Aqueduc de Louiseville." **Supply:** by gravity from springs, 9 miles distant; also has an emergency plant, pumping water from the river du Loup through a filter directly into mains; steam power used. **Filter:** gravel filter used when pumping as above. **Reservoir:** one, (for Can. Pac. Ry.) 45,000 gal. capacity. **Distribution:** 12 miles of C. I. and W. I. mains, 3 in. to 6 in.; 14 hydrants; 400 services. **Pressure:** ordinary, 18 to 25 lbs.; fire, 40 to 60 lbs. **Consumption:** 100,000 gal. **Financial:** cost of supply plant, \$6,000; cost of distribution system, \$45,000; annual maintenance, \$1,000; revenue, \$5,300. **Rates:** flat rate, on assessment, \$3 and upward per dwelling. Officer in charge: D. Caron, Secretary-treasurer.

MAGOG, Stanstead co., (3,600). In operation since 1907; owned by municipality. **Supply:** pumped from lake Memphremagog, $\frac{1}{2}$ mile distant, to reservoir; electric power used, 100 h.p.; pumping apparatus is in duplicate. **Reservoir:** one, 40 ft. x 60 ft. **Distribution:** $1\frac{1}{2}$ miles of C. I. mains; 30 hydrants; 325 services, 1 in. pipe. **Pressure:** 120 lbs. **Financial:** cost of supply plant, \$8,000; cost of distribution system, \$40,000; annual maintenance, \$3,000; revenue, \$6,000. **Rates:** flat rate, \$7 and \$8 per family; \$3 for bath-room; \$1 for additional tap; meter rate 15c. to 30c. per 1,000 gal. Officer in charge: Chas. Powers, Superintendent.

MAISONNEUVE, Hochelaga co., In operation since 1890, owned by Montreal Water & Power Co., (see under Montreal.)

MARIEVILLE, Rouville co., (1,500). In operation since 1903; owned by municipality. **Supply:** by gravity from Rougemont lake and springs, 6 miles distant. **Reservoir:** one, 19,000 gal. capacity. **Distribution:** $9\frac{1}{4}$ miles of C. I. mains, 4 in. and 6 in.; 36 hydrants; 300 services. **Pressure:** ordinary, 55 lbs.; fire, 100 lbs. (Gasoline pump used to raise pressure in case of fire.) **Consumption:** 30,000 gal. **Financial:** total cost of plant, \$55,000; annual maintenance, \$600; revenue, \$2,900. **Rates:** flat rate, \$7 per tap. Officer in charge: N. Bédard.

MEGANTIC, Megantic co., (2,500). In operation since 1901; owned by municipality. **Supply:** by gravity from springs, with an emergency plant pumping from lake. **Reservoirs:** two, 180,000 gal. and 20,000 gal. capacity. **Distribution:** 5 miles of C. I. mains, 4 in. to 8 in.; 32 hydrants; 600 services, lead and galvanized iron pipes. **Pressure:** 85 lbs. **Financial:** cost of supply plant, \$25,000; cost of distribution system, \$35,000; annual maintenance, \$300; revenue from consumers, \$4,250; from public uses, \$75. **Rates:** flat rate, \$6 per tap, bath-room \$5. Officer in charge: Arthur Savard.

MONTEBELLO, Labelle co., (1,200). In operation since 1870, Privately owned. **Supply:** by gravity from a spring, half mile distant. **Reservoirs:** three, one has a capacity of 112,000 gal.; others are small. **Distribution:** 2 miles of galvanized iron mains, 1½ in. to 3 in.; (had wooden mains at first); 4 hydrants; 140 services, ½ in. and ¾ in. pipes. **Financial:** annual maintenance, \$200; revenue, \$1,200. **Rates:** flat rate, \$7 to \$10 per dwelling. Officer in charge: F. F. Aubry.

MONTMAGNY, Montmagny co., (2,700). In operation since 1905; owned by a company. **Supply:** by gravity from springs and brook, 4½ miles distant; also has 100 h.p. steam auxiliary plant to pump water from Bras St. Nicolas river in case of fire. **Reservoir:** one, 37,500 gal. capacity. **Distribution:** 11 miles of C. I. mains, 2 in. to 8 in.; 31 hydrants; 550 services, ½ in. pipe. **Pressure:** ordinary, 50 lbs.; fire, 110 lbs. **Consumption:** 100,000 gal. **Financial:** total cost of plant, \$78,800; annual maintenance, \$1,000; revenue, \$6,300. **Rates:** flat rate, \$8 to \$20 per dwelling on assessment basis. Officer in charge: Jos. Cloutier.

MONTREAL, The Montreal municipal water works system supplies 23 of the 31 wards of the city; The Montreal Water and Power Co. supply the following eight wards: St. Paul, St. Henri, Ste. Cunégonde, Côte des Neiges, Laurier, St. Denis, Mount Royal, and DeLorimier. In DeLorimier and Côte des Neiges the piping system is owned by the city.

MUNICIPAL SYSTEM. Population supplied, 350,000. In operation since 1857. **Supply:** pumped from St. Lawrence river, above Lachine rapids, 6 miles distant and 1200 feet from shore, directly into mains, with overflow to reservoir; steam, hydraulic, and electric power used, maximum 2,200 h.p., average 1,900 h.p.; parts of plant are in duplicate in case of emergencies. **Reservoirs:** two, 37,500,000 gal. and 1,750,000 gal. capacity, respectively. **Distribution:** 300 miles of C. I. mains, 4 in. to 36 in.; 2000 hydrants; 75,000 services, ½ in. to 1 in. lead pipe, 1 in. to 2 in. galvanized iron and 4 in. to 8 in. cast iron. **Pressure:** 35 to 80 lbs.

for low-level, and 90 to 125 lbs. for high-level reservoir. **Consumption:** 42,800,000 gal. **Financial:** total cost of plant, \$13,868,050; annual maintenance, \$339,330; revenue, \$1,143,255. **Rates:** flat rate, 5 per cent. on yearly rental for dwellings, 4 per cent. for places of business, except hotels and restaurants, which are charged 10 per cent.; meter rate, \$1.15 per 1000 cubic feet. Officer in charge: T. W. Lesage, Chief Engineer and Superintendent.

A system of slow sand and mechanical filtration is now in course of construction. The mechanical is being installed to be used as a preliminary filter, if the water should become grossly polluted.

MONTREAL WATER AND POWER CO. Population supplied, 230,000.* In operation since 1891. **Supply:** pumped from St. Lawrence river, 7 miles distant, to reservoir and directly into mains; electric power used, maximum 4000 h.p., average, 3200 h.p.; pumping apparatus is in duplicate, with steam plant as a reserve. **Reservoirs:** two, high-level, 8,000,000 gal. capacity; low-level, 43,000,000 gal. capacity. **Filter:** mechanical gravity system. **Distribution:** 157 miles of C. I. and steel mains, 4 in. to 48 in.; 41,600 services, lead and galvanized iron pipes. **Pressure:** 60 to 90 lbs. **Consumption:** 25,000,000 gal. **Rates:** flat rate. Officer in charge: F. H. Pitcher, Manager.

This system also supplies Westmount, Outremont and Maisonneuve.

INDEPENDENT SYSTEMS. In addition to the two systems described above, the city owns and operates the following:

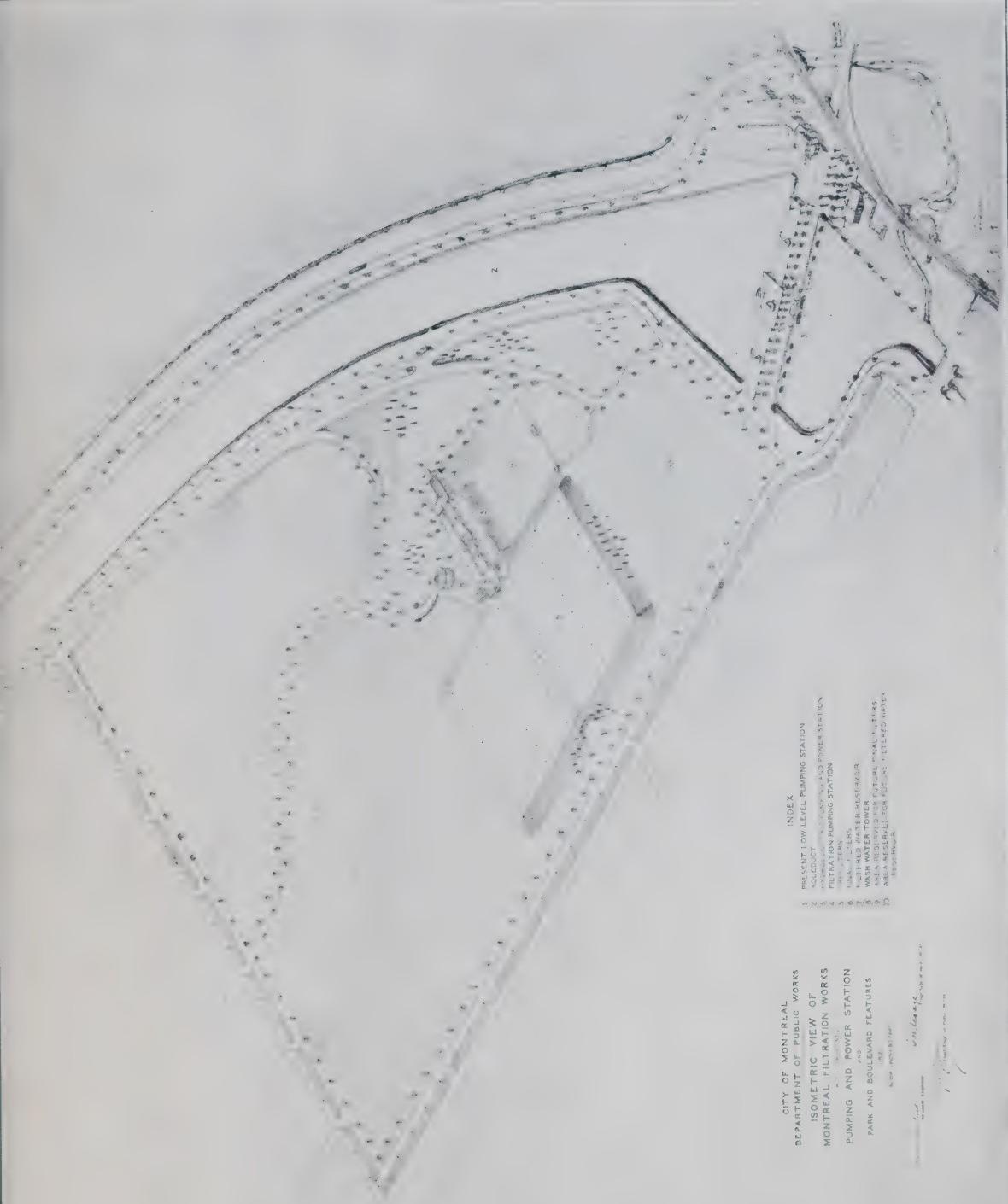
AHUNTSIC. **Supply:** pumped from riv. des Prairies; electric power used, 20 h.p. **Consumption:** 60,000 gal.

BORDEAUX. **Supply:** pumped from riv. des Prairies by the Saraguay Electric and Water Co. **Consumption:** 87,400 gal.

EMARD WARD. **Supply:** pumped from one of the municipal system conduits; electric power used; two pumps of a total capacity of 750,000 gal. per day. **Consumption:** 340,000 gal.

NOTRE-DAME-DE-GRACE, (5,250). In operation since 1907, **Supply:** pumped from St. Lawrence river, at Lachine, directly into mains and to stand-pipes; gas and electric power used, two 80 h.p. gas-power pumps; repumped to higher level by 1,000,000 gal. electrically driven pump. **Reservoirs:** three stand-pipes, capacity 70,000 gal. **Distribution:** 19 miles of C. I. mains, 4 in. to 12 in.; 68 hydrants; 1000 services, lead pipe. **Pressure:** 70 lbs. (low-level), 125 lbs. (high-level) **Consumption:** 1,000,000 gal. **Financial:** annual maintenance, \$15,000; revenue, \$40,000.

*Population statistics supplied by the Montreal Water and Power Co.



CITY OF MONTREAL
DEPARTMENT OF PUBLIC WORKS
ISOMETRIC VIEW OF
MONTREAL FILTRATION WORKS
AND
PUMPING AND POWER STATION
PARK AND BOULEVARD FEATURES

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The towns of St. Pierre and Montreal West are also supplied from above system.

TETREAULTVILLE. Supply: pumped from artesian wells; steam power used; capacity, 200,000 gal.

MONTREAL WEST, Jacques-Cartier co., (700). Distribution system owned by municipality. Supply: from Notre-Dame-de-Grâce system (see under Montreal). Reservoirs: three wooden tanks, each 18 ft. diameter by 15 ft. high. Distribution: C. I. mains; 25 hydrants; 172 services, $\frac{5}{8}$ in. lead pipe. Pressure: 70 lbs. Consumption: 34,100 gal. Financial: annual revenue, \$1,400. Rates: meter rate, 8c. and upward per 1,000 gal.

NICOLET, Nicolet co., (2,900). In operation since 1881; owned by municipality. Supply: pumped from Nicolet river, 225 feet distant, directly into mains; steam and electric power used, 24 to 50 h.p.; pumping apparatus in duplicate. Distribution: 5 miles of C. I. and W. I. mains, 1 in. to 6 in.; 26 hydrants; 313 services, $\frac{1}{2}$ in. lead pipe and 1 in. galvanized iron pipe. Pressure: ordinary, 75 to 80 lbs.; fire, 150 to 160 lbs. Consumption: 275,000 gal. Financial: total cost of plant, \$60,000; annual maintenance, \$600; revenue, \$6,800. Rates: flat rate on assessment basis. Officer in charge: Jos. St. Cyr.

NORTH HATLEY, Stanstead co., (500). In operation since 1902, owned by North Hatley Water Co. Supply: by gravity from springs, $1\frac{3}{4}$ mile distant. Reservoirs: two, 190,000 and 10,000 gal. capacity. Distribution: 3 miles of C. I. and W. I. mains, $\frac{1}{2}$ in. to 4 in.; 65 services. Pressure: 70 lbs. Financial: cost of supply plant, \$2,000; cost of distribution system, \$3,000; annual revenue, \$600. Rates: flat rate, \$4 to \$12 per dwelling. Officer in charge: B. LeVaren.

PAPINEAUVILLE, Labelle co., (700). In operation since 1887; privately owned. Supply: by gravity from a spring 2 miles distant. Distribution: $2\frac{1}{2}$ miles of W. I. mains, 3 in.; 60 services, lead pipe. Financial: total cost of plant, \$5,000; annual maintenance, \$150; revenue, \$700. Rates: flat rate, \$6 to \$12 per dwelling. Owner, T. Bonhomme.

PIERREVILLE, Yamaska co., (1,200). In operation since 1905; owned by a company. Supply: pumped from St. Francis river, 50 feet out from shore to a reservoir; steam power used. Reservoir: one of 20,000 gal. Distribution: 3 miles of W. I. mains, 2 in. to 4 in.; 22 hydrants; 200 services, $\frac{1}{2}$ in. and $\frac{3}{4}$ in. galvanized iron pipe. Pressure: 50 to 100 lbs.

Consumption: 20,000 gal. **Financial:** total cost of plant, \$12,000; annual maintenance, \$500; revenue, \$2,000. **Rates:** flat rate, \$6 per dwelling. Officer in charge: O. Lafrenière.

PLESSISVILLE, Megantic co., (1,750). In operation since 1910; owned by municipality. **Supply:** by gravity from a spring, 1,500 feet distant; also pumped from another spring to reservoirs; steam power used, 40 h.p. **Reservoirs:** two, 48 ft. x 24 ft. and 24 ft. x 20 ft. **Distribution:** 3 miles of C. I. mains, 4 in. to 8 in.; 36 hydrants; 325 services, 1 in. to 1½ in. pipes. **Pressure:** ordinary, 20 lbs.; fire, up to 200 lbs. **Financial:** cost of plant, \$35,000; annual maintenance, \$800; revenue from consumers, \$2,900; from public uses, \$1,500. **Rates:** flat rate, \$7 per tap; \$3 for bath-room.

POINTE-AU-PIC, Charlevoix co., (2,500). In operation since 1896; owned by private company. **Supply:** by gravity from springs, 2 miles distant. **Reservoirs:** four, one of which is 125 ft. x 130 ft.; others are small. **Distribution:** 12 miles of C. I. mains, 3 in. to 5 in.; 8 hydrants; 300 services. **Pressure:** ordinary, 90 lbs.; fire, 60 lbs. **Financial:** cost of supply plant, \$25,000; cost of distribution system, \$10,000; annual maintenance, \$300; revenue from consumers, \$4,500; from public uses, \$200. **Rates:** flat rate, \$6 and upward per dwelling. Officer in charge: Edward Warren.

QUEBEC, Quebec co., (75,000). In operation since 1857; owned by municipality. **Supply:** by gravity from St. Charles river, 9 miles distant; double pipe line from intake to city. **Distribution:** 75 miles of C. I. mains, 4 in. to 30 in.; 600 hydrants; 8,500 services, ½ in. to 1 in. lead pipe. **Pressure:** ordinary, 40 to 60 lbs.; fire, 80 to 100 lbs. **Consumption:** 10,000,000 gal. **Financial:** total cost of plant, \$2,500,000; annual maintenance, \$25,000; revenue from consumers, \$287,000; from public uses, \$2,000. **Rates:** flat rate, 12½ per cent. on rental value; \$2 for bath-room. Officer in charge: J. Gallagher, Water-works Engineer.

LIMOILOU, (6,000), now part of Quebec, has a separate water-works system. In operation since 1895; owned by municipality. **Supply:** by gravity from springs and brook, 3 miles distant. **Distribution:** 5 miles of C. I. mains, 3 in. to 8 in.; 25 hydrants; 500 services. **Pressure:** ordinary, 40 to 80 lbs.; fire, 80 lbs. **Consumption:** 400,000 gal. **Financial:** total cost of plant, \$50,000; annual maintenance, \$3,000; revenue, \$3,000. **Rates:** flat rate, \$6 per dwelling. Officer in charge: J. Gallagher, Water-works Engineer for city of Quebec.

RICHELIEU, Richelieu co., (400). In operation since 1906; owned by a company. **Supply:** pumped from Richelieu river, $\frac{1}{2}$ mile distant; electric power used, 6 h.p. **Filter:** used with good results. **Reservoir:** 45,000 gal. capacity. **Distribution:** C. I. mains, 4 in. and 6 in.; 20 hydrants; 90 services, lead pipe. **Pressure:** ordinary, 22 lbs.; fire, 70 lbs. **Consumption:** 40,000 gal. **Financial:** cost of supply plant, \$1,500; cost of distribution system, \$17,000; annual revenue from consumers, \$800; from public uses, \$200. **Rates:** flat rate, \$8 per dwelling. Officer in charge: Dr. A. D. Lindeau.

RICHMOND, Richmond co., (2,175). In operation since 1882; owned by municipality. **Supply:** by gravity from reservoirs, $1\frac{1}{2}$ mile distant. **Reservoirs:** two; area, 1 acre. **Distribution:** 6 miles of mains, 4 in. to 12 in.; 42 hydrants; 375 services. **Pressure:** 80 lbs. **Financial:** total cost of plant, \$52,000; annual maintenance, \$500; revenue, \$3,400. **Rates:** flat rate, \$14 per dwelling.

RIGAUD, Vaudreuil co., (1,200). In operation since 1894; owned by municipality. **Supply:** by gravity from springs, one mile distant. **Reservoirs:** two of 100,000 and 126,000 gal., respectively. **Distribution:** 3 miles of C. I. mains, 4 in. to 9 in.; 18 hydrants; 150 services. **Pressure:** 85 lbs. **Consumption:** 18,000 gal. **Financial:** total cost of plant, \$20,000; annual maintenance, \$350; revenue, \$1,500. **Rates:** flat rate, \$10 per dwelling.

RIMOUSKI, Rimouski co., (3,000). In operation since 1905, owned by municipality. **Supply:** by gravity from lake l'Anguille, 6 miles distant. **Reservoir:** one of 250,000 gal. **Distribution:** $14\frac{1}{2}$ miles of C. I. mains, 4 in. to 10 in.; 54 hydrants; 300 services, $\frac{1}{2}$ in. and $\frac{3}{4}$ in. lead and galvanized iron pipes. **Pressure:** ordinary, 95 lbs; fire, 110 lbs. **Consumption:** 300,000 gal. **Financial:** total cost of plant, \$125,000; annual maintenance, \$200; revenue, \$3,500. **Rates:** flat rate, \$6 per family; \$4 for bath-room. Officer in charge: M. Pineau, Inspector.

ROBERVAL, Chicoutimi co., (1,900). In operation since 1899; owned by municipality. **Supply:** by gravity from Latour brook, $1\frac{1}{2}$ mile distant. **Distribution:** 4 miles of C. I. mains, 8 in.; 24 hydrants; 350 services, galvanized iron pipe. **Pressure:** 80 lbs. **Financial:** total cost of plant, \$53,500; annual maintenance, \$550; revenue from consumers, \$3,500; from public uses, \$500. **Rates:** flat rate, \$10 per dwelling.

ROCK ISLAND, Stanstead co., also supplies Stanstead, Que., and Derby Line, Vt. (total population, 4,200). In operation since 1892; owned by the

International Water Co. **Supply:** by gravity from springs, $2\frac{1}{2}$ miles distant; an auxiliary gasoline pumping plant used in time of drought. **Reservoirs:** four, 70,000; 100,000; 150,000, and 1,500,000 gal. capacity. **Distribution:** 10 miles of C. I. mains, 4 in. to 10 in.; 64 hydrants; 400 services, $\frac{1}{2}$ in. galvanized iron pipe. **Pressure:** 80 lbs. **Consumption:** 120,000 gal. **Financial:** total cost of plant, \$60,000; annual maintenance, \$1,500 to \$2,000; revenue, \$5,600. **Rates:** flat rate, \$6 minimum; \$7.50 for bath-room. Officer in charge: E. W. Hovey, Superintendent.

STE. AGATHE-DES-MONTS, Terrebonne co., (2,020). Owned by municipality. **Supply:** by gravity from Petit Lac des Sables and springs, $2\frac{1}{2}$ miles, and 1 mile distant, respectively. **Distribution:** 7 miles of W. I. mains, 2 in. to 4 in.; 20 hydrants. **Pressure:** 65 to 70 lbs. **Financial:** total cost of plant, \$91,000; annual revenue \$5,300. **Rates:** flat rate, \$6 plus $\frac{1}{4}$ c per \$100 assessment. Officer in charge: H. Dazé, Secretary-treasurer.

STE. ANNE-DE-BEAUPRE, Montmorency co., (2,000). In operation since 1907; owned by municipality. **Supply:** by gravity from springs. **Reservoir:** one, 100,000 gal. capacity. **Distribution:** $1\frac{1}{2}$ mile of mains, 4 in. and 6 in.; 14 hydrants; 100 services, $\frac{3}{4}$ in. to $1\frac{1}{2}$ in. pipe. **Pressure:** ordinary, 70 lbs.; fire, 80 lbs. **Consumption:** 100,000 gal. **Financial:** total cost of plant, \$20,000; annual maintenance, \$300; revenue \$1,500. **Rates:** flat rate, \$5.50 per family; \$3.50 for bath-room. Officer in charge: E. Fortier.

ST. CESAIRES, St. Hyacinthe co., (850). In operation since 1877; owned by municipality. Improvements made in 1892. **Supply:** by gravity from springs, $4\frac{1}{2}$ miles distant. **Reservoirs:** two of small sizes. **Distribution:** 8 miles of C. I. mains, 2 in. to 4 in.; 197 services, lead pipe. **Pressure:** ordinary, 45 lbs; fire, 65 lbs. **Consumption:** 26,000 gal. **Financial:** total cost of plant, \$14,000; annual maintenance, \$50; revenue from consumers, \$1,400; from public uses, \$400. **Rates:** flat rate, \$4 to \$8 per dwelling. Officer in charge: J. B. Dulude.

ST. EUSTACHE, Deux-Montagnes co., (2,100). In operation since 1911; privately owned. **Supply:** by gravity from springs, 7 miles distant. **Reservoir:** one of 60,000 gal. **Distribution:** $9\frac{1}{2}$ miles of wooden, W. I. and C. I. mains, 4 in. to 8 in.; 30 hydrants; 225 services, $\frac{1}{2}$ in. galvanized iron pipe. **Pressure:** 45 lbs. **Consumption:** 40,000 gal. **Financial:** cost of supply plant, \$3,000; cost of distribution system, \$36,000; annual maintenance, \$600; revenue from consumers, \$2,400; from public uses,

\$450. **Rates:** flat rate \$6 and upward per dwelling. Owner, A. E. Pontbriand, Sorel, Que.

ST. FELIX-DE-KINGSEY, Arthabaska co., (550). In operation since 1908; owned by "Compagnie d'Aqueduc de Kingsey." **Supply:** pumped from springs, 1 mile distant to a reservoir; wind power used. **Filter:** charcoal and gravel filter used. **Reservoir:** one, 800 gal. capacity. **Distribution:** W. I. mains, $\frac{1}{2}$ in. to 2 in.; 1 hydrant; 20 services, $\frac{1}{2}$ in. galvanized iron pipe. **Financial:** total cost of plant, \$2,000; annual revenue, \$160. **Rates:** flat rate, \$6 per dwelling; \$2 bath-room. Officer in charge: Dr. Letendre.

Another system resembling the above supplies ten other consumers in the same village.

ST. FELIX-DE-VALOIS, Joliette co., (600). In operation since 1876; privately owned. **Supply:** by gravity from spring, 1 mile distant. **Reservoir:** three small, and one of 6,000 gal. capacity. **Distribution:** $2\frac{1}{2}$ miles W. I. mains, $2\frac{1}{2}$ in. to 4 in.; one hydrant; 100 services, galvanized iron and lead pipes. **Pressure:** 5 to 45 lbs. **Consumption:** 30,000 gal. **Financial:** total cost of plant, \$7,500; revenue, \$700. **Rates:** flat rate, \$5 per dwelling; bath-room \$2. Owner: G. Asselin.

STE. FLAVIE STATION, (MONTJOLY) Matane co., (1,800). In operation since 1905; privately owned. **Supply:** by gravity from Noir and Aubin lakes, $3\frac{1}{2}$ miles distant. **Distribution:** 8 miles of C. I. mains, 4 in. to 8 in.; 30 hydrants; 160 services, $\frac{1}{2}$ in. galvanized iron pipe. **Pressure:** 70 lbs. **Consumption:** 250,000 gal. **Financial:** cost of supply plant, \$50,000; cost of distribution system, \$15,000; annual maintenance, \$700; revenue from consumers, \$3,600; from public uses, \$200.

STE. GENEVIEVE-DE-BATISCAN, Champlain co., (1,900). In operation since 1901; owned by "Société de l'Aqueduc des Laurentides." **Supply:** by gravity from a brook, 2 miles distant. **Reservoir:** one, 6,000 gal. capacity. **Distribution:** 5 miles of wooden and W. I. mains, 2 in. to 3 in.; 93 services. **Financial:** total cost of plant, \$5,000; annual maintenance, \$180; revenue, \$800. **Rates:** flat rate, \$7 per dwelling. Officer in charge: A. St. Arnaud, Manager.

ST. HILAIRE STATION, Rouville co., (1,200). Privately owned. **Supply:** by gravity from lake Hertel, 4 miles distant. **Reservoirs:** three, 19,000 gal.; 24,000 gal. capacity; the other one is small. **Distribution:** 4 miles of C.I. mains; 30 services. **Pressure:** 32 lbs. **Consumption:** 80,000 gal.

Financial: total cost of plant, \$10,000; annual maintenance, \$100.
Rates: flat rate, \$8 to \$20 per dwelling. Owner: B. F. Campbell.

ST. HYACINTHE, St. Hyacinthe co., (11,057). In operation since 1894; owned by municipality. **Supply:** pumped from Yamaska river, $\frac{1}{2}$ mile distant, directly into mains; steam and electric power used, maximum, 125 h.p., average, 75 h.p. Boilers and pumps are in duplicate and there are two separate pumping stations. **Filter:** Jenckes (Sherbrooke) filters used. **Distribution:** 17½ miles of C. I. and W. I. mains, 2 in. to 24 in.; 104 hydrants; 2,090 services, lead and galvanized iron pipes. **Pressure:** ordinary, 70 lbs.; fire, 125 lbs. **Consumption:** 1,250,000 gal. **Financial:** total cost of plant, \$275,000; annual maintenance, \$10,000; revenue, \$30,000. **Rates:** flat rate on assessment basis, \$6 and upward per dwelling. Officer in charge: D. T. Bouchard, Superintendent.

ST. JEROME, Terrebonne co., (4,500). In operation since 1890; owned by municipality. **Supply:** by gravity from North river, 3 miles distant, and from a spring 2 miles distant. **Distribution:** 12 miles of C. I. mains, 6 in. to 16 in.; 72 hydrants; 1,200 services. **Pressure:** 65 lbs. to 120 lbs. **Financial:** total cost of plant, \$96,000; annual maintenance, \$225; revenue, \$9,083. **Rates:** flat rate, \$6 to \$12 per dwelling on assessment basis. Officer in charge: E. Marchand, Secretary-Treasurer.

ST. JOHNS, St. Johns co., (6,400). In operation since 1872; owned by "L'Aqueduc de St. Jean." **Supply:** pumped from Richelieu river directly into mains; steam power used; pumping apparatus in duplicate. **Distribution:** 10½ miles of mains; 76 hydrants; 1,050 consumers. **Pressure:** ordinary, 50 lbs.; fire, 125 lbs. **Rates:** flat rate, \$6 and upward per dwelling; meter rate, 20c. to 30c. per 1000 gal. Officer in charge: E. Langlois.

ST. JOSEPH-DE-BEAUCE, Beauce co., (1,400). In operation since 1908; owned by municipality. **Supply:** by gravity from springs, 3 miles distant. **Reservoir:** one, 67,000 gal. capacity. **Distribution:** 4½ miles of C. I. and W. I. mains, 3 in. and 6 in.; 12 hydrants; 250 services, 1 in. galvanized iron pipe. **Pressure:** 65 lbs. **Consumption:** 35,000 gal. **Financial:** total cost of plant, \$35,000; annual maintenance, \$300; revenue, \$2,400. **Rates:** flat rate, \$6 per dwelling; \$4 for bath-room. Officer in charge: J. Vachon.

ST. JOSEPH-DE-SOREL, Richelieu co., (2,200). In operation since 1908; privately owned. **Supply:** pumped from St. Lawrence river, one mile distant to reservoir; electric power used, maximum, 25 h.p., average, 15 h.p.; pumps in duplicate. **Reservoir:** one, 35,000 gal. capacity.

Distribution: 5 miles of C. I. and W. I. mains, 1½ in. to 6 in.; 13 hydrants; 225 services, ½ in. galvanized iron pipe. **Pressure:** ordinary, 40 lbs.; fire, 120 lbs. **Consumption:** 20,000 gal. **Financial:** total cost of plant, \$28,000; annual maintenance, \$600; revenue, \$1,700. **Rates:** flat rate, \$6 per tap; bath-room, \$4. Officer in charge: J. Champagne, Local Manager.

ST. LAMBERT, Chambly co., (2,659). In operation since 1887; owned by municipality. **Supply:** pumped to tank from the St. Lawrence river, 1,500 feet distant; steam and electric power used, average 75 h.p.; pumping apparatus in duplicate. **Reservoir:** one, capacity, 100,000 gal. **Distribution:** 7½ miles of C. I. mains, 4 in. to 10 in.; 68 hydrants; 518 services, lead pipe. **Pressure:** ordinary, 60 lbs.; fire, 125 lbs. **Consumption:** 240,000 gal. **Financial:** cost of supply plant, \$17,500; cost of distribution system, \$86,500; annual maintenance, \$4,457; revenue, \$7,902. **Rates:** meter, 15c. to 27c. per 1,000 gal.; flat rate, \$8.50 and upward per dwelling.

ST. LAURENT, Jacques-Cartier co., (2,300). In operation since 1904; owned by municipality. **Supply:** pumped to reservoir from river des Prairies, 3 miles distant; steam and electric power used. **Reservoir:** one of steel, 83 ft. by 21 ft. **Distribution:** 7 miles of C. I. mains, 4 in. to 8 in.; 36 hydrants; 445 services, ½ in. lead pipe. **Pressure:** ordinary, 28 lbs. to 35 lbs.; fire, 120 lbs. **Consumption:** 120,000 gal. **Financial:** cost of supply plant, \$2,000; annual maintenance, \$1,100; revenue, \$5,300. **Rates:** flat rate, 10 per cent. on rental value. Officer in charge: R. Lecavalier, Superintendent.

STE. MARTINE-DE-CHATEAUGUAY, Chateauguay co., (500). In operation since 1900; privately owned. **Supply:** pumped to tank from Chateauguay river, 500 feet distant; wind power and gasoline engine used, average, 6 h.p. **Distribution:** 2 miles of C. I. mains, 2 in. to 6 in.; 6 hydrants; 105 services, ½ in. and ¾ in. lead pipe. **Consumption:** 5,000 gal. **Financial:** annual maintenance, \$125; revenue, \$800. **Rates:** flat rate, \$6 to \$16 per dwelling. Officer in charge: A. Bédard.

ST. PATRICE-DE-BEAURIVAGE, Lotbinière co., (900). In operation since 1908; privately owned. **Supply:** by gravity from a spring, ½ mile distant. **Distribution:** ½ mile of W. I. mains, ½ in. to 2½ in.; 16 services, ½ in. pipe. **Financial:** cost of supply plant, \$100; cost of distribution system, \$1,400; annual maintenance, \$110; revenue, \$155. **Rates:** flat rate, \$7 per dwelling. Owner: J. B. Gagné.

SHAWINIGAN FALLS, St. Maurice co., (4,300). In operation since 1903; owned by municipality. **Supply:** pumped from St. Maurice river, $\frac{1}{4}$ mile distant, to reservoir, or directly into mains; electric power used; maximum, 125 h. p., average, 30 h. p. **Reservoir:** one, 30,000 gal. capacity. **Distribution:** $4\frac{3}{4}$ miles of C. I. mains, 4 in. to 12 in.; 50 hydrants; 700 services, $\frac{5}{8}$ to 1 in. lead pipe. **Pressure:** ordinary, 90 lbs; fire, 170 lbs. **Consumption:** 750,000 gal. **Financial:** total cost of plant, \$93,000; annual maintenance, \$3,800; revenue, \$6,000. **Rates:** flat rate, \$6 per dwelling; meter rate, 3c. to 75c. per 1000 gal. Officer in charge: A. Giguère, Superintendent.

SHERBROOKE, Sherbrooke co., (16,000). In operation since 1880; owned by municipality. **Supply:** pumped from Magog river, $3\frac{3}{4}$ miles distant to reservoir, stand-pipe or directly into mains; water-power used; average, 100 h.p. **Reservoirs:** one, 2,500,000 gal. capacity; stand-pipe, 25,000 gal. **Distribution:** 27 miles of C. I. mains, 2 in to 24 in.; 143 hydrants; 1,900 services, galvanized iron and lead pipes. **Pressure:** ordinary, 15 to 100 lbs; fire, 40 to 125 lbs. **Consumption:** 1,800,-000 gal. **Financial:** cost of supply plant, \$135,000; cost of distribution system, \$207,000; annual maintenance, \$15,000; revenue, \$41,000. **Rates:** flat rate, \$5 to \$9 per dwelling; bath-room, \$5. Officer in charge: Thos. Tremblay, City Engineer.

SOREL, Richelieu co., (10,000). In operation since 1872; owned by municipality. **Supply:** pumped from Richelieu river to reservoir, or directly into mains; steam and electric power used; maximum, 120 h. p., average, 55 h.p. **Reservoir:** one, 100,000 gal. capacity. **Distribution:** 13 miles of C. I. mains, 2 in. to 8 in.; 59 hydrants; 2,300 services lead pipe. **Pressure:** ordinary, 50 lbs; fire, 90 to 120 lbs. **Financial:** total cost of plant, \$145,000; annual maintenance, \$7,000; revenue, \$21,000. **Rates:** flat rate, based upon rental value, \$6 and upward per dwelling; meter rate, 19c. per 1000 gal.

STANSTEAD, (See Rock Island)

SUTTON, Brome co., (1,000). In operation since 1898, owned by municipality. **Supply:** by gravity from a small lake and brook, 2 miles distant. **Filter:** gravel filter used. **Reservoir:** one, 100 ft. x 50 ft. **Distribution:** 5 miles of C. I. mains, 4 in. to 10 in.; 33 hydrants; 145 services, $\frac{1}{2}$ in. and 1 in. galvanized iron pipe. **Pressure:** 75 lbs. **Financial:** total cost of plant, \$20,000; annual maintenance, \$100; revenue, \$2,200. **Rates:** flat rate, \$6 per dwelling; \$4 for bath-room. Officer in charge: W. J. Kemp, Superintendent.

TERREBONNE, Terrebonne co., (2,000). In operation since 1898; owned by municipality. **Supply:** by gravity from a spring, 4 miles distant. **Reservoirs:** two. **Distribution:** 5 miles of W. I. pipe, 2 in. to 6 in.; 20 hydrants; 400 services. **Pressure:** 40 lbs. **Consumption:** 10,000 gal. **Financial:** cost of supply plant, \$3,500; cost of distribution system, \$40,000; annual maintenance, \$200; revenue, \$3,500. **Rates:** flat rate, \$8 to \$10 per dwelling.

THETFORD MINES, Megantic co., (7,000). In operation since 1909; owned by municipality. **Supply:** by gravity from springs, 2 miles distant. **Reservoirs:** two, 170,000 gal. and 840,000 gal. **Distribution:** 8½ miles of C. I. mains, 6 in. to 12 in.; 98 hydrants; 1,300 services. **Pressure:** 105 lbs. **Financial:** total cost of plant, \$224,232; annual maintenance, \$1,800; revenue \$16,000. **Rates:** flat rate, about \$8 per dwelling. Officer in charge: E. Lamonde, Superintendent.

THREE RIVERS, St. Maurice co., (14,000). In operation since 1876; owned by municipality. **Supply:** pumped from St. Maurice river, 100 ft. distant directly into mains; electric power used; maximum 500 h.p., average, 200 h.p. **Filter:** pressure filter used. **Distribution:** 16 miles of C. I. mains, 4 in. to 12 in.; 136 hydrants; 2,500 services. **Pressure:** ordinary, 90 lbs; fire, 135 lbs. **Consumption:** 1,500,000 gal. **Financial:** total cost of plant, \$271,801; annual maintenance, \$12,902; annual revenue, \$32,395. **Rates:** flat rate, on assessment basis which averages \$10 per dwelling. Officer in charge: T. Désaulniers, Secretary.

VALLEYFIELD, Beauharnois co., (10,000). In operation since 1886, extended in 1896; owned by municipality. **Supply:** pumped from St. Lawrence river directly into mains; water power used. **Distribution:** 11 miles of C. I. mains, 4 in. to 12 in.; 131 hydrants; 2,025 services, $\frac{1}{2}$ in. and $\frac{3}{4}$ in. lead pipe. **Pressure:** ordinary, 90 lbs; fire, 120 to 140 lbs. **Consumption:** 1,200,000 gal. **Financial:** total cost of plant, \$178,000; annual maintenance, \$3,000; revenue, \$15,000. **Rates:** flat rate, on assessment basis: \$5 and upward per dwelling. Officer in charge: P. Masse, Superintendent.

VAUDREUIL, (See Dorion)

VERDUN, Jacques-Cartier co., (12,000). In operation since 1908; owned by municipality. **Supply:** pumped from St. Lawrence river, 1,000 feet from shore, directly into mains; steam power used; maximum, 120 h.p., average, 40 h.p.; pumping plant in duplicate. **Filter:** mechanical, alum coagulant used. **Distribution:** 15 miles C. I. mains, 4 in. to 12 in.;

120 hydrants; 5,000 services, $\frac{1}{2}$ in. and $\frac{5}{8}$ in. lead pipe. **Pressure:** ordinary, 40 to 50 lbs.; fire, 85 to 100 lbs. **Consumption:** 600,000 gal. **Financial:** cost of supply plant, \$60,000; cost of distribution system, \$100,000; annual maintenance, \$10,000; revenue, \$20,000. **Rates:** flat rate, 5 per cent. on rental value. Officer in charge: H. Hendley, Town Engineer.

VARENNES, Verchères co., (1,500). In operation since 1892; privately owned. **Supply:** pumped from St. Lawrence river, 1,500 feet distant, to reservoir; gas and wind power used; maximum, 25 h.p., average, 12 h.p.; pumps in duplicate. **Reservoir:** one of 60,000 gal. **Distribution:** $2\frac{1}{2}$ miles of C. I. mains, 2 in. to 6 in.; 12 hydrants; 225 services, $\frac{1}{2}$ in. galvanized iron pipe. **Pressure:** ordinary, 45 lbs.; fire, 125 lbs. **Consumption:** 40,000 gal. **Financial:** cost of supply plant, \$14,000; cost of distribution system, \$11,000; annual maintenance, \$900; revenue from consumers, \$1,800; from public uses, \$400. **Rates:** flat rate, \$6 and upward per dwelling. Officer in charge: A. Lajoie, Superintendent. Owner: A. E. Pontbriand, Sorel, Que.

WARDEN, Shefford co., (150). In operation since 1894; privately owned. **Supply:** by gravity from springs, $\frac{1}{2}$ mile distant. **Reservoir:** one, 20 ft. x 30 ft. **Distribution:** $\frac{1}{2}$ mile C. I. and W. I. mains, $2\frac{1}{2}$ in. to 4 in.; 2 hydrants; 10 services, $\frac{1}{2}$ in. galvanized iron pipe. **Pressure:** 50 lbs. **Financial:** revenue from consumers, \$100. **Rates:** flat rate, \$10 per dwelling. Owner: J. A. McLaughlin.

WATERLOO, Shefford co., (1,800). Owned by municipality. **Supply:** partly by gravity, and partly pumped from spring and artesian wells $\frac{1}{4}$ mile distant to reservoir. **Reservoir:** one, 370,000 gal. capacity. **Distribution:** 4 miles of C. I. mains, 3 in. to 10 in.; 33 hydrants; 190 services. **Pressure:** ordinary, 70 lbs.; fire, 50 lbs. **Financial:** total cost of plant, \$30,000; annual maintenance, \$300; revenue, \$3,000. **Rates:** flat rate, \$8 per dwelling. Officer in charge: T. Lajoie, Superintendent.

WATERVILLE, Compton co., (1,000). In operation since 1902; privately owned. **Supply:** by gravity from springs 1 mile distant. **Reservoir:** one, 125,000 gal. capacity. **Filter:** brick and charcoal filter used. **Distribution:** 3 miles of C. I. and W. I. mains, 4 in. and 6 in.; 15 hydrants; 100 services, $\frac{1}{2}$ in. galvanized iron pipe. **Pressure:** 80 lbs. **Consumption:** 35,000 gal. **Financial:** cost of supply plant, \$10,000; cost of distribution system, \$10,000; annual revenue from consumers, \$1,500; from public uses, \$650. **Rates:** flat rate, \$12 per dwelling. Officer in charge: W. H. Ward, Secretary-treasurer of the company.

WINDSOR MILLS, Richmond co., (2,300). In operation since 1900; owned by municipality. **Supply:** partly by gravity from springs, $\frac{3}{4}$ mile distant, and partly pumped from Wattopekah river, $\frac{3}{4}$ mile distant, to reservoir. **Filter:** mechanical gravity filter used. **Reservoir:** one, 53 ft. x 62 ft. **Distribution:** 3 miles of C. I. mains, 4 in. to 8 in.; 27 hydrants; 400 services. **Pressure:** ordinary, 15 to 60 lbs.; fire, 40 to 75 lbs. **Consumption:** 125,000 gal. **Financial:** total cost of supply plant, \$30,000; cost of distribution system, \$30,000; annual maintenance, \$1,000; revenue, \$2,900. **Rates:** flat rate, \$6 for kitchen tap; \$5 for bath-room. Officer in charge: M. Bégin, Superintendent.



ONTARIO

ALEXANDRIA, Glengarry co., (2,400). In operation since 1895; owned by municipality. **Supply:** pumped from Delisle river, $\frac{3}{4}$ mile distant, to stand-pipe or directly into mains; steam power used, maximum 200 h.p.; average, 75 h.p.; boilers and pumps are in duplicate. **Reservoir:** stand-pipe, 96,000 gal. capacity. **Distribution:** $2\frac{1}{2}$ miles C. I. mains; 31 hydrants; 200 services, galvanized iron and lead pipes. **Pressure:** ordinary, 56 lbs.; fire, 110 lbs. **Consumption:** 250,000 gal. **Financial:** cost of plant, \$26,000; annual maintenance, \$3,370; annual revenue, \$3,645. **Rates:** flat rate, \$6 per dwelling; \$3 for bath-room; meter rate, 17c. to 30c. per 1,000 gal. Officer in charge: D. J. Macdonell, Town Foreman.

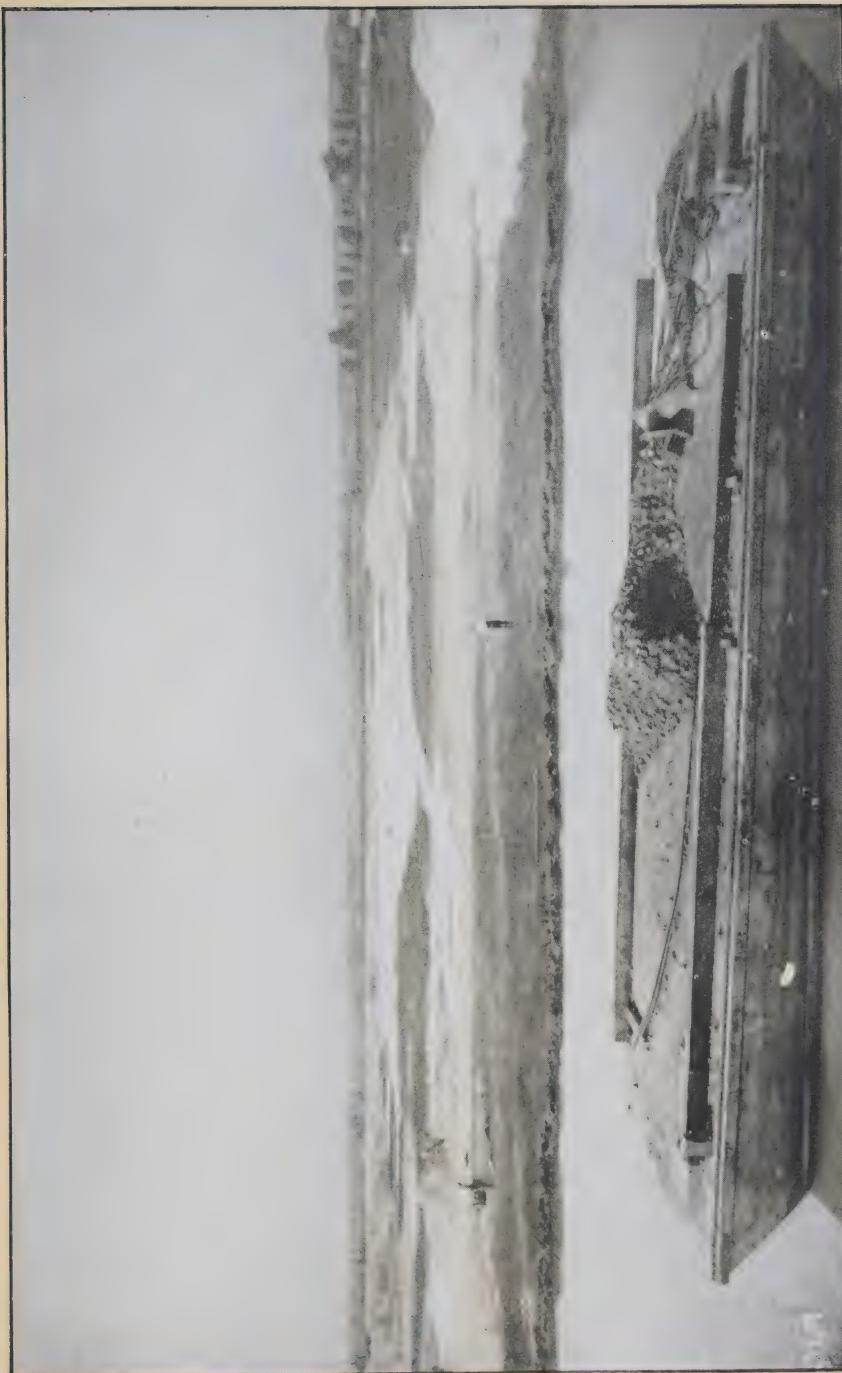
ALLISTON, Simcoe co., (1,500). In operation since 1891; owned by municipality. **Supply:** pumped to tank from reservoir, 1,000 feet distant; steam power used, 50 h.p. **Distribution:** 4 miles of C. I. mains, 6 in. and 8 in.; 20 hydrants; 70 services; $\frac{1}{2}$ in. and $\frac{3}{4}$ in. galvanized iron pipes. **Pressure:** ordinary, 60 lbs.; fire, 100 lbs. **Consumption:** 100,000 gal. **Financial:** cost of supply plant, \$10,000; cost of distribution system, \$10,000; annual maintenance, \$1,300; revenue, \$1,500. **Rates:** flat and meter rates used; meter rate, 8c. per 1,000 gal. Officer in charge: J. Smalley.

ALVINSTON, Lambton co., (841). In operation since 1893; pumping plant owned by Grand Trunk railway; distribution system owned by municipality. **Supply:** pumped from Sydenham river, 1,500 feet distant, directly into mains; steam power used, 10 h.p.; pumps are in duplicate. **Distribution:** $\frac{1}{2}$ mile of C. I. mains, 3 in. and 4 in.; 7 hydrants. **Pressure:** 40 lbs. to 120 lbs. **Financial:** cost of supply plant, \$800; cost of distribution system, \$900; annual maintenance, \$513. Used for fire protection only. Officer in charge: H. R. Carruthers.

AMHERSTBURG, Essex co., (2,547). In operation since 1891; owned by municipality. **Supply:** pumped from Detroit river to tank; steam power used; capacity of pump, 1,125,000 gal. **Reservoir:** one tank, 68,000 gal. capacity. **Distribution:** $4\frac{1}{2}$ miles of mains, 4 in. to 10 in.; 42 hydrants; 627 services; $\frac{1}{2}$ in. and $\frac{3}{4}$ in. galvanized iron pipe. **Pressure:** ordinary, 30 lbs.; fire, 90 to 120 lbs. **Consumption:** 500,000 gal. **Financial:** total cost of plant, \$40,000; annual maintenance, \$3,200; revenue, \$4,500. **Rates:** flat rate.

ARNPRIOR, Renfrew co., (4,200). In operation since 1901; owned by municipality. **Supply:** pumped from Madawaska river, $\frac{3}{4}$ mile distant,

PLATE III



Courtesy, Dept. of Works, Toronto

TORONTO FILTRATION PLANT.—SITE BEFORE CONSTRUCTION.

to tank and mains; steam power used, 50 h.p.; pumps in duplicate. **Filter:** sand filter. **Distribution:** 7½ miles of C. I. mains, 4 in. to 12 in.; 64 hydrants; 800 services; lead pipe. **Pressure:** ordinary, 60 lbs.; fire, 120 lbs. **Consumption:** 500,000 gal. **Financial:** total cost of plant, including sewers, \$115,000; annual maintenance, \$6,000; revenue from consumers, \$6,000; from public uses, \$1,600. **Rates:** flat rate based on number of rooms, \$4 and upward per dwelling; bath-room, \$5. Officer in charge: J. Riddell, Inspector.

AURORA, York co., (1,800). In operation since 1888, owned by municipality. **Supply:** pumped from artesian wells to stand pipe; steam power used, 150 h.p.; boilers and pumps are in duplicate. **Reservoirs:** two, capacity, 100,000 gal. **Distribution:** 3½ miles of C. I. and galvanized iron mains, 2½ in. to 6 in.; 25 hydrants; 275 services; ½ in. and ¾ in. galvanized iron pipe. **Pressure:** ordinary, 35 lbs.; fire, 125 lbs. **Consumption:** 100,000 gal. **Financial:** total cost of plant, \$26,800; annual maintenance, \$1,300; revenue, \$2,000. **Rates:** flat rate, \$4 for first tap; bath-room, \$4. Officer in charge: C. A. Petch, Engineer.

AYLMER, Elgin co., (2,500). In operation since 1886; owned by municipality. **Supply:** by gravity from wells, 2 and 4 miles distant, to reservoir, thence pumped to stand-pipe for distribution; steam power used, maximum, 300 h.p.; average, 100 h.p. **Reservoirs:** two, of 300,000 gal. capacity each. **Distribution:** 4¾ miles of C. I. mains; 48 hydrants; 450 services. **Pressure:** ordinary, 48 lbs.; fire, 100 lbs. **Consumption:** 150,000 gal. **Financial:** total cost of plant, \$70,000; annual maintenance, \$1,053; revenue from consumers, \$2,400; from public uses, \$2,500. **Rates:** meter rate; 5c. to 36c. per 1000 gal.; minimum of \$5 per service. Officer in charge: D. C. Davis, Secretary.

BARRIE, Simcoe co., (7,000). In operation since 1890; owned by municipality. **Supply:** pumped from artesian wells, at centre of distribution, to stand-pipe; steam power used, 40 h.p.; boilers and pumps are in duplicate. **Reservoirs:** two reservoirs of 193,000 gal. total capacity; one stand-pipe of 146,000 gal. capacity. **Distribution:** 20 miles of C.I. mains; 105 hydrants; 1,400 services; 1 in. galvanized iron. **Pressure:** ordinary, 78 lbs.; fire, 120 lbs. **Consumption:** 200,000 gal. **Financial:** total cost of plant, \$120,000; annual maintenance, \$500; revenue from consumers, \$9,800; from public uses, \$3,400. **Rates:** flat rate, \$4 for first tap, \$4.50 for bath-room; meter rate, 17c. to 26c. per 1,000 gal. Officer in charge: H. E. Brownlee, Superintendent.

BEAMSVILLE, Lincoln co., (998). In operation since 1895; owned by municipality. **Supply:** by gravity from springs 1½ miles distant. **Reser-**

voirs: two of 600,000 gal. and 3,500,000 gal. capacity, respectively. **Distribution:** 2 miles of C. I. mains, 4 in. to 8 in.; 25 hydrants; 102 services; $\frac{1}{2}$ in. pipe. **Pressure:** ordinary, 80 lbs.; fire, 39 lbs. **Financial:** annual maintenance, \$450; revenue, \$520. **Rates:** flat rate, \$5 per dwelling. Officer in charge: F. Lay.

BEETON, Simcoe co., (700). In operation since 1894; owned by municipality. **Supply:** by gravity from springs $1\frac{1}{2}$ mile distant. **Reservoir:** one of 95,000 gal. capacity. **Distribution:** 2 miles of C. I. mains, 4 in. to 12 in.; 25 hydrants; 130 services; galvanized iron pipe. **Pressure:** ordinary, 75 lbs.; fire, 86 lbs. **Financial:** total cost of plant, \$14,500; annual revenue from consumers, \$1,021; from public uses, \$1,084. **Rates:** flat rate, \$4 for first tap, \$1 for each additional.

BELLEVILLE, Hastings co., (11,000). In operation since 1888; owned by municipality since 1899. **Supply:** pumped from bay of Quinte, $1\frac{1}{4}$ mile distant, to stand-pipe and directly into mains; electric power used, with steam auxiliary, maximum 110 h.p., average, 70 h.p. **Reservoir:** one stand-pipe of 365,000 gal. capacity. **Distribution:** 17 miles of mains, 4 in. to 16 in.; 230 hydrants; 2,300 services; galvanized iron pipe. **Pressure:** ordinary, 80 lbs.; fire, 125 lbs. **Consumption:** 1,100,000 gal. **Financial:** total cost of plant, \$222,000; annual maintenance, \$6,500; interest, \$11,000; revenue from consumers, \$23,000; from public uses, \$5,000. **Rates:** flat and meter rates; flat rate, \$5 and upward per dwelling; bath room, \$7; meter rate, 10c. to 30c. per 1,000 gal.

BERLIN, Waterloo co., (15,338). In operation since 1888; owned by municipality. **Supply:** pumped from artesian wells, 2 miles distant, to stand-pipe; steam power used, maximum, 150 h.p., average, 90 h.p.; boilers and pumps are in duplicate. **Reservoir:** stand-pipe of 500,000 gal. capacity. **Distribution:** 34 miles of C. I. and W. I. mains, $\frac{3}{4}$ in. to 12 in.; 218 hydrants; 2,872 services; $\frac{1}{2}$ in. to 1 in. lead and iron pipes. **Pressure:** ordinary, 75 lbs.; fire, 115 lbs. **Consumption:** 909,000 gal. **Financial:** total cost of plant, \$260,765; annual maintenance, \$12,614; revenue from consumers, \$29,130; from public uses, \$5,656. **Rates:** flat rate, \$4 per tap; meter rate, 6c. to 18c. per 1,000 gal. Officer in charge: H. Hymmen, Superintendent.

BLYTH, Huron co., (1,000). Owned by municipality. **Supply:** pumped from Blyth creek. **Reservoirs:** 10 tanks, 12 ft. by 12 ft. and 10 ft. by 12 ft. **Distribution:** $\frac{1}{2}$ mile of W. I. mains, 4 in.; 4 hydrants. **Pressure:** 110 to 140 lbs. Used for fire protection only. **Financial:** total cost of plant, \$7,000; annual maintenance, \$500.

BOTHWELL, Kent co., (800). In operation since 1908; owned by municipality. **Supply:** pumped from wells to reservoir; steam power used, 50 h.p. **Reservoir:** one of 15,000 gal. **Distribution:** 1 mile of iron main, 4 in. and 6 in.; 10 hydrants. **Pressure:** 80 lbs. **Financial:** total cost of plant, \$5,000. Used for fire protection only. Officer in charge: M. Gilbert.

BRACEBRIDGE, Muskoka district, (3,000). In operation since 1895; owned by municipality. **Supply:** by gravity from artesian wells, $\frac{3}{4}$ mile distant, to reservoir, thence pumped directly into mains; water-power used, maximum 150 h.p., average 65 h.p.; pumps and water wheels are in duplicate. **Reservoir:** one of 215,000 gal. capacity. **Distribution:** $4\frac{1}{2}$ miles of C. I. mains, 4 in. to 8 in.; 52 hydrants; 530 services; $\frac{1}{2}$ in. galv. iron pipe. **Pressure:** ordinary, 70 lbs.; fire, 100 to 120 lbs. **Consumption:** 64,000 gal. **Financial:** total cost of plant, \$44,162; annual maintenance, \$2,690; revenue from consumers, \$3,407; from public uses, \$1,256. **Rates:** flat rate of \$6 and upward per dwelling, \$4 for bath-room. Officer in charge: W. C. Simmons.

BRAMPTON, Peel co., (3,200). In operation since 1882; owned by municipality. **Supply:** by gravity from lake, 4 miles distant, fed by underground springs. There is also a steam pumping plant of 360,000 gal. capacity per day. **Distribution:** 6 miles of C. I. mains, 4 in. to 12 in.; 58 hydrants; 500 services; $\frac{1}{2}$ in. lead and galv. iron pipes. **Pressure:** 38 lbs. to 45 lbs. **Consumption:** 275,000 gal. **Financial:** total cost of plant, \$80,000; annual maintenance, \$600; revenue from consumers, \$6,000. **Rates:** flat rate, \$12 per dwelling; meter rate, 20c to 33c per 1,000 gal. Officer in charge: W. M. Treadfold, Town Engineer.

BRANTFORD, Brant co., (25,000). In operation since 1889; owned by municipality. **Supply:** collecting galleries to wells 2 miles distant, thence pumped directly into mains; steam power used, 125 h.p.; pumps are in duplicate. **Distribution:** 50 miles of C. I. mains, 4 in. to 14 in.; 279 hydrants; 5,681 services, $\frac{1}{2}$ in. and $\frac{3}{4}$ in. lead pipe. **Pressure:** ordinary, 80 lbs.; fire, 120 lbs. **Consumption:** 2,500,000 gal. **Financial:** total cost of plant, \$512,311; annual maintenance, \$18,466, interest, \$18,854; annual revenue, \$64,401. **Rates:** flat rate, \$1.50 to \$5 per dwelling, \$6.25 for bath-room; meter rate, 8c to 20.8c per 1,000 gal. Officer in charge: F. W. Frank, Manager.

BRIDGEBURG, Welland co., (1,700). In operation since 1903; owned by municipality. **Supply:** pumped from Niagara river, $\frac{1}{4}$ mile distant, to stand pipe; gas power used, maximum, 70 h.p.; average, 50 h.p.; en-

gines and pumps are in duplicate. **Reservoir:** one stand pipe 140,000 gal. capacity. **Distribution:** 6½ miles of C. I. and W. I. mains, 2 in. to 8 in.; 41 hydrants; 410 services, lead pipe. **Pressure:** ordinary, 20 to 45 lbs.; fire, 100 to 180 lbs. **Consumption:** 300,000 gal. **Financial:** cost of supply plant, \$10,000; cost of distribution system \$40,000; annual maintenance, \$2,400; revenue, \$4,200. **Rates:** flat rate, \$4 per dwelling, \$2 for bath-room. Officer in charge: M. House, Water Commissioner.

BROCKVILLE, Leeds co., (9,300). In operation since 1882; owned by municipality. **Supply:** pumped from St. Lawrence river directly into mains; steam power used, 94 h.p. **Distribution:** 19 miles of C. I. mains, 4 in. to 24 in.; 127 hydrants; 2,294 services, lead and galv. iron pipes. **Pressure:** ordinary, 65 lbs.; fire, 100 lbs. **Consumption:** 2,800,000 gal. **Financial:** total cost of plant, \$262,700; annual maintenance, \$13,000; revenue from consumers, \$19,400, from public uses, \$12,500. **Rates:** flat rate, \$3.68 and upward per dwelling; bath-room, \$3.68. Officer in charge: Robt. Picken, Superintendent.

BURKS FALLS, Parry Sound dist., (946). In operation since 1905; owned by municipality. **Supply:** by gravity from Reazen lake, 3 miles distant. **Distribution:** 5 miles of C. I. mains, 6 in. to 8 in.; 23 hydrants; 115 services. **Pressure:** ordinary, 60 lbs.; fire, 125 lbs. **Consumption:** 30,000 gal. **Financial:** total cost of plant, \$34,000; annual maintenance, \$300; revenue from consumers, \$1,000; from public uses, \$350. **Rates:** flat rate, \$6.50 and upward per dwelling; bath-room \$4.50. Officer in charge: H. Blakley.

BURLINGTON, Halton co., (1,600). In operation since 1910; owned by municipality. **Supply:** pumped from artesian wells, 1½ mile distant, to stand-pipe or directly into mains; electric power used, maximum, 28 h.p., average, 25 h.p.; pumping apparatus is in duplicate. **Reservoirs:** well, 50,000 gal. capacity, stand-pipe, 100,000 gal. capacity. **Distribution:** 8½ miles of C. I. mains, 4 in. to 8 in.; 60 hydrants; 125 services; lead pipe. **Pressure:** ordinary 48 lbs.; fire, 140 lbs. **Consumption:** 25,000 gal. **Financial:** cost of supply plant, \$7,000; cost of distributing system, \$40,000. **Rates:** meter rate, 10c. to 33c. per 1000 gal.; minimum, \$7.80 per dwelling. Officer in charge: P. Dawson, Secretary-Treasurer.

CALEDONIA, Haldimand co., (900). In operation since 1860; owned by Grand Trunk railway. **Supply:** pumped from Grand river to tank, or directly into mains; steam power used, 32 h.p. **Reservoir:** one, capacity 25,000 gal. **Distribution:** ½ mile of C. I. mains, 4 in.; 6 hydrants; 32 services, 1 in. pipe. **Pressure:** ordinary, 60 lbs., fire, 80 lbs. **Financial:**

annual cost of maintenance, \$1,600; revenue from consumers, \$225.; from public uses, \$25. **Rates:** flat rate of \$10 per dwelling; meter, 15c per 1,000 gal. Officer in charge: C. Bugg.

CAMPBELLFORD, Northumberland co., (3,000). In operation since 1890; owned by municipality. **Supply:** pumped from Trent river, directly into mains, water-power used; maximum, 90 h.p., average, 45 h.p.; pumps and water-wheels are in duplicate. **Distribution:** 2½ miles of C. I. mains, 4 in. to 8 in.; 31 hydrants; 170 services, ¾ in. galv. iron pipe. **Pressure:** ordinary, 80 lbs; fire, 125 lbs. **Financial:** cost of supply plant, \$4,000; cost of distribution system, \$21,000; annual maintenance, \$907; revenue, \$1,179. **Rates:** flat rate, \$5 per dwelling, including bath-room. Water not used for drinking purposes. Officer in charge: E. C. West, Town Clerk.

CARDINAL, Grenville co., (1,200). In operation since 1894; owned by Cardinal Water Co. **Supply:** pumped from St. Lawrence river, 900 ft. distant, to tank, or directly into mains; steam and water-power used, maximum, 60 h.p., average, 30 h.p.; pumps are in duplicate. **Filter:** pressure filter. **Reservoir:** one, capacity 100,000 gal. **Distribution:** 3 miles of C. I. mains, 1 in. to 6 in.; 9 hydrants; 230 services; W. I. pipe. **Pressure:** ordinary, 40 lbs.; fire, 100 lbs. **Consumption:** 5,000 gal. **Financial:** revenue from consumers, \$1,268; from public uses, \$672. **Rates:** flat rate, \$5 for first tap, \$2 for each additional. Operated by the Edwardsburg Starch Co., Ltd.

CHATHAM, Kent co., (10,300). In operation since 1891; owned by municipality. **Supply:** pumped from Thames river, ¼ mile distant, to stand-pipe; steam power used, maximum, 150 h.p., average, 55 h.p.; boilers are in duplicate. **Filter:** sedimentation basin and mechanical filters used. **Reservoir:** sedimentation basin, 8,500,000 gal. capacity. **Distribution:** 28½ miles C. I. and W. I. mains, ¾ in. to 12 in.; 199 hydrants; 2,200 services, 1⅓ in. galv. iron pipe. **Pressure:** ordinary, 40 lbs.; fire, 110 lbs. **Consumption:** 850,000 gal. **Financial:** total cost of plant, \$213,000; annual maintenance, \$600; revenue from consumers, \$22,000; from public uses, \$890. **Rates:** all sold by meter, rate, 20c, (less 12½ per cent.) per 1,000 gal. Officer in charge: E. B. Jones, Superintendent.

CLINTON, Huron co., (2,500). In operation since 1910; owned by municipality. **Supply:** pumped from deep wells to stand-pipe; producer gas engine used, maximum, 50 h.p., average, 25 h. p.; engines in duplicate. **Reservoir:** one of 75,000 gal., and one stand-pipe of 100,000 gal., capacity. **Distribution:** 6 miles of C. I. mains, 4 in. to 10 in.; 56 hydrants; 325 ser-

vices; $\frac{3}{4}$ in. galv. iron pipe. **Pressure:** ordinary, 60 lbs.; fire, 120 lbs. **Consumption:** 50,000 gal. **Financial:** total cost of plant, \$59,000; annual maintenance, \$1,250. **Rates:** flat rate, \$5.50 per dwelling; meter rate, 24c per 1,000 gal.

COBALT, Nipissing dist., (6,000). In operation since 1909; owned by municipality. **Supply:** pumped from Sasaginaga lake, $\frac{3}{4}$ mile distant, to stand-pipe; electric power used, average, 60 h.p.; pumps and motors in duplicate. **Reservoir:** one stand-pipe, 184,000 gal. capacity. **Distribution:** 3 miles of C. I. mains, 4 in. to 10 in.; 28 hydrants; 420 services, 1 in. and 2 in. galv. iron pipe. **Pressure:** 85 lbs. **Consumption:** 435,000 gal. **Financial:** total cost of plant, \$96,442; annual maintenance, \$7,000; revenue, \$10,223. **Rates:** flat rate of \$15 and upward per dwelling.

COBOURG, Northumberland co., (5,000). In operation since 1889; owned by Cobourg Utilities Corporation, Ltd. **Supply:** pumped from lake Ontario, $1\frac{1}{2}$ mile distant, and from 6 artesian wells, to stand-pipe and mains; steam power used, 50 h.p. to 100 h.p.; boilers and pumps are in duplicate. **Reservoir:** stand-pipe 16 ft. by 116 ft., 145,000 gal. **Distribution:** 11 miles of C. I. mains, 4 in. to 12 in.; 82 hydrants; 850 services; galv. iron pipe. **Pressure:** ordinary, 50 to 70 lbs.; fire, 100 lbs. **Consumption:** 600,000 gal. **Financial:** cost of supply plant, \$40,000; cost of distribution system, \$130,000; annual maintenance, \$7,000, exclusive of interest; annual revenue, \$15,000. **Rates:** flat rate \$5 and upward per dwelling; bath-room \$6.50; meter rate, 10c to 25c per 1,000 gal. Officer in charge: J. E. Skidmore, managing Director.

COLLINGWOOD, Simcoe co., (7,600). In operation since 1889; owned by municipality. **Supply:** pumped from Georgian bay, $1\frac{1}{2}$ mile distant, directly into mains; steam power used; pumps are in duplicate. **Distribution:** 20 miles of C. I. and W. I. mains, $\frac{3}{4}$ in. to 10 in.; 90 hydrants; 1,600 services. **Pressure:** ordinary, 45 lbs.; fire, 120 lbs. **Consumption:** 600,000 gal. **Financial:** cost of supply plant, \$12,000; cost of distribution system, \$61,000; annual maintenance, \$12,000; revenue from consumers, \$10,400; from public uses, \$3,600. **Rates:** flat rate, \$3.50 and upward per dwelling; bath-room, \$2; meter rate, 12c. per 1000 gal. Officer in charge: John Rose.

CORNWALL, Stormont co., (6,300). In operation since 1887; owned by municipality. **Supply:** pumped from St. Lawrence river, $\frac{3}{4}$ mile distant, to stand-pipe; water and steam power used, average, 75 h. p.; pumps are in duplicate. **Reservoir:** stand-pipe of 235,000 gal. **Distribution:** 18 miles of C. I. mains, 2 in. to 12 in.; 90 hydrants; 1,300 services, $\frac{3}{4}$ in. galv. iron pipe. **Pressure:** ordinary 73 lbs.; fire, 110 lbs. **Consumption:** 1,100,000

gal. **Financial:** total cost of plant, \$150,000; annual maintenance, \$5,000; revenue, \$16,000. **Rates:** flat rate, \$6 for first tap; bath-room, \$6.50; meter rate, 25c per 1,000 gal.

CREEMORE, Simcoe co., (750). In operation since 1905; owned by municipality. **Supply:** by gravitation from springs 2 miles distant. **Reservoir:** one, 20 ft. by 30 ft. **Distribution:** 2 miles of iron and wooden mains, 4 in. to 8 in.; 13 hydrants; 65 services. **Pressure:** 90 lbs. **Financial:** total cost of plant, \$22,000; annual maintenance, \$75.; revenue, \$650. **Rates:** flat rate, \$1 to \$5 per dwelling. Officer in charge: William Young, Supervisor.

DESERONTO, Hastings co., (3,000). In operation since 1897; owned by municipality. **Supply:** pumped from bay of Quinte, $\frac{1}{4}$ mile distant, to stand-pipe; gas and steam power used, average, 65 h.p.; pumping apparatus in duplicate. **Reservoir:** stand-pipe, 72,000 gal. **Distribution:** 5 miles of C. I. mains, 4 in. to 10 in.; 60 hydrants; 250 services, gal. iron pipe. **Pressure:** 80 lbs. **Consumption:** 60,000 gal. **Financial:** cost of supply plant, \$10,000; cost of distribution system, \$40,000; annual maintenance, \$3,000; revenue, \$2,000. **Rates:** flat rate, \$5 per tap. Officer in charge: H. R. Bedford, Secretary-Treasurer.

DUNDAS, Wentworth co., (4,297). In operation since 1884; owned by municipality. **Supply:** by gravity from springs $2\frac{1}{2}$ miles distant. **Filter:** mechanical filter used. **Reservoir:** one, 1,000,000 gal. **Distribution:** $6\frac{1}{2}$ miles of C. I. and wooden mains, 3 in. to 12 in.; 77 hydrants; 300 services, lead pipe. **Pressure:** 75 lbs. **Consumption:** 12,000,000 gal. **Financial:** total cost of plant, \$65,000; annual maintenance, \$600; revenue, \$3,200. **Rates:** flat rate, \$6 to \$8 per dwelling; meter rate 10c. to 25c. per 1000 gal. Officer in charge: W. H. Knowles, Superintendent.

DUNNVILLE, Haldimand co., (3,000). In operation since 1891; owned by municipality. **Supply:** pumped from Grand river to reservoir, or directly into mains; gas power used; capacity of pump, 1,250,000 gal. **Reservoir:** one, 50,000 gal. capacity. **Distribution:** $5\frac{1}{2}$ miles of mains; 47 hydrants; 400 services. **Pressure:** ordinary, 40 lbs.; fire, 75 lbs. **Financial:** annual maintenance, \$2,500; revenue, \$5,235. **Rates:** flat rate, \$6.25 for first tap; bath-room \$3.12. Officer in charge: H. M. Jackson, Superintendent.

DURHAM, Grey co., (1,500). In operation since 1906; privately owned. **Supply:** by gravity from springs, 1 mile distant. **Distribution:** 3 miles

of wooden and iron mains, up to 6 in.; 150 services. **Financial:** total cost of plant, \$9,000; annual revenue, \$1,500. **Rates:** flat rate, \$5 to \$20 per dwelling. H. J. Snell, Owner.

ELMIRA, Waterloo co., (1,850). In operation since 1907; owned by municipality. **Supply:** pumped from wells, $\frac{1}{2}$ mile distant, to stand-pipe; oil engine used, 35 h.p. **Reservoir:** one, 62,000 gal. capacity. **Distribution:** 3 miles of C. I. mains, 4 in. to 8 in.; 35 hydrants; 105 services, $\frac{1}{2}$ in. galv. iron pipe. **Pressure:** ordinary, 45 lbs.; fire, 110 to 125 lbs. **Consumption:** 25,000 gal. **Financial:** total cost of plant, \$25,000, annual maintenance, \$600; revenue from consumers, \$375, from public uses, \$225. **Rates:** flat and meter rates; flat rate \$5 per dwelling. Officer in charge: Robt. T. McCallum, Superintendent.

ESSEX, Essex co., (1,300). In operation since 1890; owned by municipality. **Supply:** pumped from artesian wells to tank; steam power used, average 25 h.p. **Reservoir:** one, capacity 175,000 gal. **Distribution:** 3 $\frac{1}{2}$ miles of C. I. mains, 4 in. to 10 in.; 34 hydrants; 350 services, lead pipe. **Pressure:** ordinary, 25 lbs.; fire, 95 to 100 lbs. **Consumption:** 100,000 gal. **Financial:** total cost of plant, \$34,000; annual revenue, \$2,200. **Rates:** flat rate, \$7 to \$8 per dwelling. Officer in charge: Albert Perry, Engineer.

EXETER, Huron co., (1,700). In operation since 1911; owned by municipality. **Supply:** pumped from river, $\frac{3}{4}$ mile distant, to tank; gasoline engine and electric power used, average 75 h.p. **Reservoir:** one of 40,000 gal. **Distribution:** 1 $\frac{3}{4}$ mile of C. I. mains, 4 in. to 8 in.; 18 hydrants; 16 services, $\frac{1}{2}$ in. to 2 in. pipe. **Pressure:** 50 to 100 lbs. **Consumption:** 37,000 gal. **Financial:** total cost of plant, \$26,019; annual maintenance, \$250; revenue, \$562. **Rates:** flat rate.

FORT ERIE, Welland co., (1,410). In operation since 1910; owned by municipality. **Supply:** pumped from Niagara river, 1 $\frac{1}{2}$ mile distant, to stand-pipe; gas engines used, average, 30 h.p.; engines and pumps are in duplicate. **Reservoir:** stand-pipe, 130,000 gal. capacity. **Distribution:** 8 $\frac{1}{4}$ miles of C. I. mains, 4 in. to 10 in.; 80 hydrants; 300 services, $\frac{3}{4}$ in. galv. iron pipe. **Pressure:** ordinary, 65 lbs.; fire, 120 lbs. **Consumption:** 30,000 gal. **Financial:** total cost of plant, \$56,000; annual maintenance, \$700; revenue, \$1,100. **Rates:** flat rate, average \$7 per dwelling. Officer in charge: Town Clerk.

FORT FRANCES, Rainy River dist., (1,600). In operation since 1908; owned by municipality. **Supply:** pumped from Rainy river, 1 $\frac{1}{4}$ miles distant, to storage reservoir; gasoline engine used, average 60 h.p. **Reservoir:**

one, capacity 100,000 gal. **Distribution:** 5½ miles of C. I. mains, 6 in. to 10 in.; 41 hydrants; 125 services, ¾ in. lead pipe. **Pressure:** 35 to 100 lbs. **Consumption:** 65,000 gal. **Financial:** total cost of plant, \$82,476; annual maintenance, \$2,192, not including debentures; revenue, \$5,415. **Rates:** flat rate, average of \$20, less 25 per cent. discount per dwelling. Officer in charge: James Wilson, Engineer.

FORT WILLIAM, Thunder Bay dist., (19,000). In operation since 1909; owned by municipality. **Supply:** by gravity from Loch Lomond, 8 miles distant. **Reservoirs:** Loch Lomond, area 10 sq. m.; one concrete reservoir, capacity 800,000 gal. **Distribution:** 41 miles of C. I. mains, 4 in. to 18 in.; 325 hydrants; 4,238 services, ½ in. lead pipe to 8 in. C. I. pipe. **Pressure:** 110 to 125 lbs. **Consumption:** 3,500,000 gal. **Financial:** cost of supply plant, \$600,000; cost of distribution system, \$296,500; annual maintenance, \$22,000; revenue from consumers, \$60,947; from public uses, \$15,000. **Rates:** flat rate, \$8 to \$14 per dwelling; \$6 to \$10 for bath-room. Officer in charge: John Wilson, City and Water-works Engineer.

GALT, Waterloo co., (9,800). In operation since 1892; owned by municipality. **Supply:** pumped from springs, ¼ mile distant, to reservoir, or directly into mains; steam power used, 57 h.p. to 100 h.p.; pumps and boilers are in duplicate. **Reservoir:** one, 114,000 gal. capacity. **Distribution:** 27 miles of C. I. and W. I. mains, 2 in. to 12 in.; 140 hydrants; 2,410 services. **Pressure:** ordinary, 95 lbs.; fire, 125 lbs. **Consumption** 825,000 gal. **Financial:** cost of supply plant, \$26,000; cost of distribution system, \$162,000; annual maintenance, \$5,535; revenue from consumers, \$16,182; from public uses, \$7,426. **Rates:** flat rate, \$3.75 and upward per dwelling; meter rate, 11·2c. to 28·8c. per 1,000 gal. Officer in charge: S. Bartleman, Superintendent.

GANANOQUE, Leeds co., (3,800). In operation since 1905; owned by municipality. **Supply:** pumped from St. Lawrence river, 3,960 ft. distant, to stand-pipe; steam power used, maximum 50 h.p., average 35 h.p. **Reservoir:** stand-pipe, 80 ft. by 20 ft., 156,000 gal. **Distribution:** 5½ miles of C. I. mains, 4 in. to 8 in.; 68 hydrants; 378 services, lead pipe. **Pressure:** ordinary, 50 lbs.; fire, 115 lbs. **Consumption:** 168,000 gal. **Financial:** total cost of plant, \$166,500; annual maintenance, \$2,500; revenue from consumers, \$4,000; from public uses, \$1,200. **Rates:** meter rate 32c. to 40c. per 1,000 gal.; minimum charge of \$1.66 per quarter. Officer in charge: N. R. Gardner, Superintendent.

GEORGETOWN, Halton co., (1,629). In operation since 1892; owned by municipality. **Supply:** by gravity from springs 3 miles distant. **Reser-**

voir: one, 400,000 gal. capacity. **Distribution:** 7½ miles of C. I. mains, 4 in. to 10 in.; 40 hydrants; 275 services, ½ in. to 2 in. galv. iron pipe. **Pressure:** 72 to 118 lbs. **Consumption:** 76,000 gal. **Financial:** total cost of plant, \$43,300; annual maintenance, \$250; revenue, \$3,031. **Rates:** flat rate \$5 plus \$4 for bath-room. Officer in charge: A. McDonald.

GODERICH, Huron co., (5,000). In operation since 1888; owned by municipality. **Supply:** pumped from lake Huron through sedimentation basin, ½ mile distant, directly into mains or stand-pipe; steam power used, maximum 175 h.p., average 100 h.p.; boilers and pumps are in duplicate. **Reservoirs:** stand-pipe of 125,000 gal.; sedimentation basin of 300,000 gal. **Distribution:** 11½ m. of C. I. and W. I. mains, 2 in. to 10 in.; 64 hydrants; 1,200 services, ½ in. lead pipe. **Pressure:** ordinary, 50 lbs.; fire, 80 to 170 lbs. **Consumption:** 500,000 gal. **Financial:** total cost of plant, \$84,092; annual maintenance, \$5,000; interest, \$5,000; annual revenue from consumers, \$8,842; from public uses, \$4,242. **Rates:** flat rate, \$5 per dwelling; bath-room \$6. Officer in charge: J. B. Kelly, Superintendent.

GRAVENHURST, Muskoka dist., (2,000). In operation since 1909; owned by municipality. **Supply:** pumped from Gull lake, 350 ft. distant, directly into mains or stand-pipe; electric power used, maximum 65 h.p., average, 30 h.p.; pumps are in duplicate. **Distribution:** 3 miles of C. I. mains, 4 in. to 10 in.; 38 hydrants; 175 services, galv. iron pipe. **Pressure:** ordinary, 75 lbs.; fire, 140 lbs. **Consumption:** 60,000 gal. **Financial:** cost of supply plant, \$8,000; cost of distribution system, \$12,000; annual maintenance, \$2,085; revenue from consumers, \$1,061; from public uses, \$800. **Rates:** flat rate, \$6 per dwelling. Officer in charge: W. J. Stubbs, Secretary-Treasurer.

GRIMSBY, Lincoln co., (1,800). In operation since 1905; owned by municipality. **Supply:** pumped from lake Ontario, ¼ mile distant, directly into mains and to reservoir; electric power used, average, 50 h.p.; pumping apparatus is in duplicate. **Purification:** sedimentation basin. **Reservoir:** one, 175,000 gal. capacity. **Distribution:** 25 miles of 6 in. and 8 in. mains; 40 hydrants; 1,000 services. **Pressure:** ordinary, 140 lbs.; fire, 150 lbs. **Consumption:** 175,000 gal. **Financial:** cost of supply plant, \$25,000; cost of distribution system, \$30,000; annual maintenance \$2,000; revenue from consumers, \$3,000; from public uses, \$1,000. **Rates:** flat rate, \$5 per annum. Officer in charge: M. St. John.

GUELPH, Wellington co., (15,000). In operation since 1880; owned by municipality. **Supply:** by gravity from spring, 4 miles distant, and pumped to stand-pipe and mains; steam power used, 90 to 120 h. p.; pumps and boiler are in duplicate. **Reservoirs:** stand-pipe 30 ft. by 100 ft., 440,000 gal., and two reservoirs, 500,000 and 2,000,000 gal. capacity. **Distribution:** 21 miles of C. I. mains; 165 hydrants; 3,162 services; lead and C. I. pipes. **Pressure:** ordinary, 95 lbs.; fire 145 lbs. **Consumption:** 1,400,-000 gal. **Financial:** total cost of plant, \$341,324; annual maintenance, \$9,921; revenue, \$31,191. **Rates:** meter 8c to 20c per 1,000 gal.; flat rate, 45c per room plus \$4.20 for bath-room. Officer in charge: A. H. Foster, Manager.

HAILEYBURY, Nipissing dist., (5,000). In operation since 1909; owned by municipality. **Supply:** pumped from lake Timiskaming, 1,200 ft. distant, to reservoir; electric power used, maximum, 150 h.p., average, 133 h.p. **Reservoir:** one, 225,000 gal. capacity. **Distribution:** 6 miles of C. I. mains, 4 in. to 10 in.; 68 hydrants; 425 services, $\frac{1}{2}$ in. to 1 in. galv. iron pipes. **Pressure:** ordinary, 80 lbs.; fire 150 lbs. **Consumption:** 192,000 gal. **Financial:** cost of supply plant, \$18,500; cost of distribution system, \$53,865; annual maintenance, \$5,000; revenue, \$7,000. **Rates:** flat rate, \$6 and upward per dwelling; bath-room, \$6. Officer in charge: T. Lemon, Superintendent.

HAMILTON, Wentworth co., (85,000). In operation since 1860; owned by municipality. **Supply:** pumped from lake Ontario, 4 miles distant, directly into mains; electric power used, maximum, 1,250 h. p., average, 1,100 h.p.; steam pumps for emergency. **Filter:** sand filter. **Reservoirs:** two reservoirs, total capacity 2,500,000 gal. **Distribution:** 137 $\frac{1}{2}$ miles of C. I. mains, 4 in. to 30 in.; 1,239 hydrants; 18,439 services, lead pipe. **Pressure:** 65 lbs. **Consumption:** 10,500,000 gal. **Financial:** cost of supply plant, \$800,000; cost of distribution system, \$1,645,000; annual maintenance, \$51,761; revenue, \$273,046. **Rates:** flat rate on assessment basis, \$4 and upward per dwelling; bath-room, \$2; meter rate, 7 $\frac{1}{2}$ c. and 10c. per 1,000 gal. Officer in charge: A. F. McCallum, City Engineer.

HANOVER, Grey co., (2,523). In operation since 1902; owned by municipality. **Supply:** pumped from Saugeen river at town directly into mains; water-power used, 31 h. p. **Distribution:** 4 miles of C. I. mains, 4 in. to 10 in.; 39 hydrants; 166 services, $\frac{1}{2}$ in. to 2 in. pipes. **Financial:** total cost of plant, \$31,000; annual maintenance, \$2,301, (including interest); revenue, \$1,510. **Rates:** flat rate, \$3 for house tap, bath-room, \$5. Officer in charge: J. Taylor, Town Clerk.

HAWKESBURY, Prescott, co. (4,294). In operation since 1903; owned by municipality. **Supply:** pumped from Ottawa river, 1 mile distant,

to tank; steam power used, average 47 h.p.; boilers and pumping apparatus in duplicate. **Reservoir:** one tank, 80,000 gal. capacity. **Distribution:** 4 miles of C. I. mains, 6 in. to 12 in.; 55 hydrants; 800 services, $\frac{1}{2}$ in. to $\frac{3}{4}$ in. lead pipe. **Pressure:** ordinary, 70 to 86 lbs.; fire, 110 lbs. **Consumption:** 320,000 gal. **Financial:** total cost of plant, \$100,000; annual maintenance, \$3,000, (including interest); revenue, \$4,895. **Rates:** flat rate, \$6 and upward per dwelling; bathroom, \$5. Officer in charge: W. G. Higginson, Engineer.

HUNTSVILLE, Muskoka dist., (2,307). In operation since 1898; owned by municipality. **Supply:** pumped from Vernon lake, $\frac{3}{4}$ mile distant, to reservoir; steam power used; pumps in duplicate. **Reservoir:** one, 800,000 gal. capacity. **Distribution:** 5 miles of C.I. mains, 4 in. to 10 in.; 37 hydrants; 450 services, galv. iron pipe. **Pressure:** 90 to 100 lbs. **Financial:** cost of supply plant, \$4,000; cost of distribution system, \$25,000; annual revenue from consumers, \$3,200; from public uses, \$1,700. **Rates:** flat rate, \$6.50 per tap. Officer in charge: Geo. Rolston.

INGERSOLL, Oxford co., (4,600). In operation since 1891; owned by Ingersoll Water-works Co. **Supply:** by gravity from springs to well, thence pumped to stand-pipe and mains; steam, electric and water power used; pumping apparatus in duplicate. **Reservoir:** one stand-pipe, 165,000 gal. capacity. **Distribution:** 15 miles of mains, 4 in. to 12 in.; 72 hydrants; 1,018 services, galv. iron and lead pipe. **Pressure:** ordinary, 60 lbs.; fire, 100 lbs. **Consumption:** 750,000 gal. **Financial:** total cost of plant, \$169,000; annual maintenance, \$7,000; annual revenue \$15,000. **Rates:** flat and meter rates; flat rate, \$5 and upward per dwelling; bath-room, \$6.50; meter rate, 10c. to 25c. per 1,000 gal. Officer in charge: H. G. Robinson, Superintendent.

IROQUOIS, Dundas co., (900). In operation since 1898; owned by municipality. **Supply:** pumped from St. Lawrence river, $\frac{1}{2}$ mile distant, directly into mains; water-power used, average, 50 h.p.; auxiliary steam engine. **Distribution:** 3 miles of C. I. mains, 2 in. to 6 in.; 20 hydrants; 160 services, $\frac{1}{2}$ in. and $\frac{3}{4}$ in. lead and galv. iron pipes. **Pressure:** ordinary, 50 lbs.; fire, 90 lbs. **Financial:** total cost of plant, \$40,000; annual maintenance, \$750; revenue, \$1,400. **Rates:** flat rate, \$6 per dwelling, bath-room, \$3.

KENORA, Kenora dist., (6,500). In operation since 1899; owned by municipality. **Supply:** pumped from lake of the Woods, $1\frac{1}{2}$ mile distant, directly into mains; steam and electric power used, average, 100 h.p., maximum, 150 h.p. **Distribution:** 6 miles C. I. mains, 4 in. to 12 in.;

52 hydrants; 900 services, $\frac{1}{2}$ in. galv. iron pipe. **Pressure:** ordinary, 70 lbs.; fire, 110 lbs. **Consumption:** 800,000 gal. **Financial:** total cost of plant, \$200,000; annual maintenance, \$9,676; revenue, \$19,222. **Rates:** flat rate, from \$2.95 upward, per dwelling, according to size; bath-room, \$2.

KINCARDINE, Bruce co., (2,775). In operation since 1889; owned by municipality. **Supply:** pumped from lake Huron to stand-pipe; steam power used, 40 to 60 h.p.; boilers are in duplicate. **Filter:** gravel and sand filter used with satisfactory results. **Reservoir:** one stand-pipe 16 ft. by 100 ft., 125,000 gal; and two reservoirs of 96,000 gal. capacity. **Distribution:** 3 miles C. I. mains; 35 hydrants; 392 services. **Pressure:** ordinary, 50 to 80 lbs.; fire, 100 to 150 lbs. **Consumption:** 125,000 gal. **Financial:** total cost of plant, \$47,561; annual maintenance, \$2,200 (interest \$2,231); revenue from consumers, \$3,317; from public uses, \$2,431. **Rates:** flat rate, \$5 to \$6 per dwelling; bath-room, \$6.50; meter rate, 10c. per 1,000 gal. Officer in charge: A. H. Ingram, Superintendent.

KINGSTON, Frontenac co., (19,500). In operation since 1850; owned by municipality. **Supply:** pumped from lake Ontario, $\frac{1}{2}$ mile distant, to mains and reservoir; steam power used, maximum, 150 h.p., average, 125 h.p.; pumps are in duplicate. **Reservoir:** one stand-pipe 80 ft. by 40 ft., 626,000 gal; situated 106 ft. above lake Ontario. **Distribution:** 32 $\frac{1}{2}$ miles C. I. mains, 3 in. to 16 in.; 257 hydrants; 3,957 services, lead and galv. iron pipes. **Pressure:** 50 to 80 lbs. **Consumption:** 2,367,000 gal. **Financial:** cost of supply plant, \$55,000; cost of distribution system, \$275,000; annual maintenance, \$15,000; revenue, \$41,000. **Rates:** Flat rate on assessment basis, \$3.75 upward; bath-room, \$3.77; meter rate, 9 $\frac{1}{2}$ c. to 48c. per 1,000 gal. Officer in charge: G. C. Folger, Superintendent.

KINGSVILLE, Essex co., (1,600). In operation since 1894; owned by municipality. **Supply:** pumped from lake Erie, one mile distant, to stand-pipe and tank; steam power used: boilers and engines are in duplicate. **Reservoir:** tank, 45,000 gal. capacity. **Distribution:** 3 $\frac{1}{2}$ miles C. I. mains, 1 in. to 8 in.; 29 hydrants; 350 services, galv. iron pipe; **Pressure:** ordinary, 32 to 50 lbs.; fire, 80 lbs. **Financial:** cost of supply plant, \$10,000; cost of distribution system, \$20,000; annual maintenance \$2,200; revenue, \$1,800. **Rates:** flat rate, \$5 per dwelling.

LEAMINGTON, Essex co., (2,800). In operation since 1891; owned by municipality. **Supply:** by gravity from artesian wells, $\frac{1}{2}$ mile distant, to pump-house, thence pumped directly into mains; steam power used,

maximum, 75 h.p., average, 45 h.p.; boilers and pumps are in duplicate. **Distribution:** 6½ miles C. I. and steel mains, 2½ in. to 10 in.; 48 hydrants; 475 services, lead and galv. iron pipes. **Pressure:** ordinary, 50 lbs.; fire, 110 lbs. **Consumption:** 175,000 gal. **Financial:** cost of supply plant, \$5,500; cost of distribution system, \$29,000; annual maintenance \$3,200; revenue, \$3,400. **Rates:** flat rate, \$5 per dwelling; bath-room, \$2. Officer in charge: F. McDonald.

LINDSAY, Victoria co., (8,000). In operation since 1892; owned by municipality. **Supply:** pumped from Scugog river to stand-pipe and also directly into mains; electric power used, maximum, 110 h.p., average, 85 h.p.; steam pumping plant in reserve. **Filter:** two mechanical filters and ozonization chamber. **Reservoir:** stand-pipe, 110 ft. by 15 ft., 135,000 gal. **Distribution:** 11 miles C. I. mains, 3 in. to 12 in.; 92 hydrants: 950 services; ½ in. to 4 in. galv. iron and C. I. pipes. **Pressure:** ordinary, 68 to 72 lbs.; fire, 95 to 120 lbs. **Consumption:** 475,000 gal. **Financial:** total cost of plant, \$120,000; annual maintenance, \$6,000; interest, \$3,238, revenue from consumers, \$12,600; from public uses, \$4,250. **Rates:** flat rate, \$6 per dwelling; bath-room, \$6.50; meter rate, 9.6c. to 40c. per 1,000 gal. Officer in charge: D. Ray, Secretary.

LISKEARD, See New Liskeard.

LISTOWEL, Perth co., (2,600). In operation since 1905; owned by municipality. **Supply:** pumped from artesian wells to stand-pipe; steam power used, average 40 h.p. **Reservoir:** one stand-pipe of 66,000 gal. capacity. **Distribution:** 5 miles of C. I. mains, 2 in. to 8 in.; 38 hydrants; 269 services, ½ in. to 1 in. pipe. **Pressure:** ordinary, 50 lbs.; fire, 80 to 120 lbs. **Consumption:** 66,000 gal. **Financial:** total cost of plant, \$44,000; annual maintenance, \$1,843; revenue, \$3,555. **Rates:** flat rate, \$5 for first tap; bath-room, \$5; meter rate, 10c. to 30c. per 1,000 gal. Officer in charge: R. H. Staford, Superintendent.

LONDON, Middlesex co., (46,300). In operation since 1878; owned by municipality. **Supply:** pumped from springs, 5 miles distant and from wells in city, to reservoir; electric power used; pumping apparatus in duplicate. **Reservoir:** one, 5,000,000 gal. at springs, and one, 1,000,000 gal. in city. **Distribution:** 105 miles C. I. mains, ½ in. to 20 in.; 681 hydrants; 12,928 services, ½ in. lead pipe. **Pressure:** 70 to 110 lbs. **Consumption:** 3,880,000 gal. **Financial:** total cost of plant, \$1,077,288; annual maintenance, \$51,565; revenue, \$129,550. **Rates:** meter rate of 12·8c. to 24c. per 1,000 gal., plus meter rental; flat rate \$5 and upward per dwelling; bath-room, \$7.50; 30 per cent. discount on flat rates. Officer in charge: N. J. Glaubitz, Manager.

MARKDALE, Grey co., (1,000). In operation since 1910; owned by municipality. **Supply:** by gravity, from spring creeks $\frac{2}{3}$ mile distant, to pumping station, thence pumped to stand-pipe; water-power used. **Filter:** gravel filter-bed. **Reservoir:** one stand-pipe 70 ft. high, 67,000 gal. capacity. **Distribution:** $5\frac{1}{3}$ miles C. I. mains, $\frac{1}{2}$ in. to 8 in.; 23 hydrants; 114 services, $\frac{1}{2}$ in. galv. iron pipe. **Consumption:** 50,000 gal. **Financial:** total cost of plant, \$30,000; annual maintenance, \$350; revenue, \$500. **Rates:** flat rate, \$3 and upward per family; bath-room, \$4 and upward. Officer in charge: R. W. Ennis, Chairman, Water-works Commission.

MARKHAM, York co., (1,000). In operation since 1890; owned by municipality. **Supply:** For fire protection only; pumped from springs, 100 yards distant, directly into mains; steam power used. **Reservoir:** one, 37,000 gal. capacity. **Distribution:** 1 mile iron pipe, 4 in. to 8 in.; 15 hydrants. **Pressure:** 150 lbs. **Financial:** cost of plant, \$10,000. Officer in charge: W. Morrison, Engineer.

MEAFORD, Grey co., (3,000). In operation since 1895; owned by municipality. **Supply:** pumped from Georgian bay, $\frac{1}{2}$ mile distant, to stand-pipe and also directly into mains; steam power used; average, 50 h.p.; boilers and pumps are in duplicate. **Filter:** 50 ft. of gravel from bay to basin. **Distribution:** 6 miles C. I. mains, 4 in. to 8 in.; 45 hydrants; 500 services, galv. iron pipe. **Pressure:** ordinary, 65 lbs.; fire, 130 lbs. **Consumption:** 200,000 gal. **Financial:** cost of supply plant, \$5,000; cost of distribution system, \$20,000; annual maintenance, \$3,000; revenue, \$3,500. **Rates:** flat rate. Officer in charge: William Rose, Superintendent.

MERRITTON, Lincoln co., (1,746). In operation since 1889; owned by municipality. **Supply:** by gravity from lake Erie (Welland canal) 3 miles distant. **Reservoir:** one, 5,000,000 gal. capacity. **Distribution:** $7\frac{1}{4}$ miles C. I. mains, 4 in. to 14 in.; 51 hydrants; 380 services, $\frac{1}{2}$ in. and $\frac{3}{4}$ in. iron pipe. **Pressure:** 30 lbs. to 103 lbs. **Financial:** cost of supply plant, \$70,000; cost of distribution system, \$17,123; annual maintenance, \$1,436; revenue, \$5,877. **Rates:** flat rate, \$5 per dwelling; bath-room, \$4. Officer in charge: R. Clark, Superintendent.

MIDLAND, Simcoe co., (4,500). In operation since 1901; owned by municipality. **Supply:** pumped from springs, $1\frac{1}{4}$ mile distant, to stand-pipe and mains; steam power used, maximum, 100 h.p., average, 75 h.p.; engines and pumps in duplicate. **Filter:** charcoal and gravel filter. **Reservoir:** one, oval, 50 ft. by 100 ft. **Distribution:** $6\frac{1}{4}$ miles C. I. mains, 4 in. to 10 in.; 76 hydrants; 1,050 services, $\frac{1}{2}$ in. iron pipe. **Pressure:**

ordinary, 80 to 90 lbs.; fire, 104 lbs. **Financial:** total cost of plant, \$85,000; annual maintenance, \$6,500; revenue, \$11,000. **Rates:** flat rate, \$6 for first tap; bath-room, \$6. Officer in charge: S. J. Millikin, Superintendent.

MILD MAY, Bruce co., (1,100). In operation since 1908; owned by W. H. Holtzman & Co. **Supply:** pumped from wells, $\frac{2}{3}$ mile distant, to tank and mains; hydraulic pressure used. **Reservoir:** one, 1,800 gal. capacity. **Distribution:** $1\frac{1}{2}$ mile galv. iron mains, $\frac{3}{4}$ in. to 3 in.; 52 services. **Financial:** total cost of plant, \$2,000; annual maintenance, \$60; annual revenue, \$275. **Rates:** flat rate, \$5 per tap. Officer in charge: W. H. Holtzman.

MILTON, Halton co., (1,700). In operation since 1887; owned by municipality. **Supply:** by gravity from springs 2 miles distant. **Reservoir:** one, 500,000 gal. capacity. **Distribution:** 4 miles of mains, 4 in. to 8 in.; 21 hydrants; 200 services, $\frac{1}{2}$ in. galv. iron pipe. **Pressure:** ordinary, 85 to 92 lbs.; fire, 92 lbs. **Consumption:** 37,500 gal. **Financial:** total cost of plant, \$37,000; annual maintenance, \$200; revenue from consumers, \$1,150; from public uses, \$650. **Rates:** flat rate, \$2.50 and upward per dwelling; bath-room, \$4. Officer in charge: W. A. Chapman, Inspector.

MITCHELL, Perth co., (2,000). In operation since 1874; owned by municipality. **Supply:** pumped from river Thames (mill pond, 4 acres) directly into mains; pumps in duplicate. **Distribution:** $2\frac{1}{4}$ miles of mains, 4 in. and 6 in.; 16 hydrants; 60 services. **Pressure:** ordinary, 60 lbs.; fire, 135 lbs. **Financial:** annual revenue, \$783. **Rates:** flat rate, \$5 per dwelling. Officer in charge: R. Ord, Superintendent.

MORRISBURG, Dundas co., (1,653). In operation since 1887; owned by municipality. **Supply:** pumped from St. Lawrence river, $\frac{1}{2}$ mile distant, directly into mains; water-power used, average, 32 h.p.: pumps are in duplicate, with a steam auxiliary. **Distribution:** 5 miles C. I. mains, 4 in. to 8 in.; 31 hydrants; 350 services, iron and lead pipe. **Pressure:** ordinary, 60 lbs.; fire, 90 lbs. **Consumption:** 300,000 gal. **Financial:** cost of supply plant, \$13,000; cost of distribution system, \$27,000; annual maintenance, including debentures, \$3,483; revenue, \$3,205. **Rates:** flat rate, \$5 per dwelling; bath-room, \$5. Officer in charge: Cyrus Casselman.

MOUNT FOREST, Wellington co., (2,200). In operation since 1898; owned by municipality. **Supply:** pumped from spring wells to stand-pipe; steam power used; maximum, 225 h.p., average, 95 h.p.; boilers in

duplicate. **Reservoir:** stand-pipe, 55,000 gal. capacity. **Distribution:** 4 miles C. I. mains, 4 in. to 12 in.; 44 hydrants; 450 services, galv. iron pipe. **Pressure:** ordinary, 55 lbs.; fire, 90 to 100 lbs. **Consumption:** 100,000 gal. **Financial:** total cost of plant, \$34,000; annual maintenance, \$3,450; revenue from consumers, \$2,900; from public uses, \$1,300. **Rates:** flat rate, \$5 per dwelling. Officer in charge: John Morris, Engineer.

NAPANEE, Lennox and Addington co., (3,300). In operation since 1890; owned by Napanee Water-works Co. **Supply:** pumped from Napanee river to stand-pipe; water-power, used, maximum, 125 h.p., average, 30 h.p.; emergency steam plant. **Reservoir:** stand-pipe, 125,000 gal. capacity. **Distribution:** 3 miles C. I. and galv. iron mains, 2 in. to 10 in.; 35 hydrants; 250 services, galv. iron pipe. **Pressure:** ordinary, 40 lbs.; fire, 100 lbs. **Consumption:** 300,000 gal. **Financial:** annual maintenance, \$1,200; revenue from consumers, \$5,100 from public uses, \$1,700. **Rates:** flat rate, \$5.75 upward per dwelling; bath-room, \$9.20; meter rate, 11½c. to 57½c. per 1,000 gal. Officer in charge: J. R. Dafoe, Superintendent.

NEW LISKEARD, Nipissing dist., (4,000). In operation since 1907; owned by municipality. **Supply:** by gravity from springs, 2½ miles distant, to pumping station, thence pumped to stand-pipe; electric power used; motors and pumps in duplicate. **Reservoir:** stand-pipe, 140,000 gal. capacity. **Distribution:** 4½ miles C. I. mains, 4 in. to 10 in.; 300 services, ½ in. galv. iron pipe. **Pressure:** 85 lbs. **Consumption:** 140,000 gal. **Financial:** total cost of plant, \$60,000; annual maintenance, \$2,720; revenue, \$2,900; **Rates:** flat rate, \$6 and upward per dwelling; bath-room, \$8. Officer in charge: J. T. Dixon, Secretary-Treasurer.

NEWMARKET, York co., (3,159). In operation since 1887; owned by municipality. **Supply:** pumped from artesian wells, in town, to reservoir and also directly into mains; steam power used, average, 130 h.p.; pumping apparatus in duplicate. **Reservoir:** catch basin at wells, 175,000 gal. capacity. **Distribution:** 6½ miles C. I. and galv. iron mains, ½ in. to 10 in.; 43 hydrants; 535 services, galv. iron pipe. **Pressure:** ordinary, 45 lbs.; fire, 100 to 110 lbs. **Consumption:** 100,000 gal. **Financial:** total cost of plant, \$29,000; annual maintenance, \$2,250; revenue, \$3,000. **Rates:** meter rate, 20c. per 1,000 gal.: flat rate, \$6 for first tap. Officer in charge: William O. Hallarn, Engineer.

NIAGARA FALLS, Welland co., (10,000). In operation since 1884; owned by municipality. **Supply:** pumped from Niagara river, 1½ mile distant, directly into mains; hydraulic and electric power used, 250 h.p. to 385

h.p.; pumps in duplicate. **Reservoir:** one, 4,000,000 gal. capacity. **Distribution:** 20 miles C. I. and wooden mains, 4 in. to 12 in.; 153 hydrants; 2,200 services, $\frac{3}{4}$ in. galv. iron pipe. **Pressure:** ordinary, 35 to 40 lbs.; fire, 50 to 75 lbs. **Consumption:** 2,231,911 gal. **Financial:** total cost of plant, \$217,380; annual maintenance, \$9,204; revenue, \$26,500. **Rates:** \$4 per dwelling; bath-room, \$4; meter rate, 6c. to 12c. per 1,000 gal. Officer in charge: Alexander Collins, Superintendent.

NIAGARA, Lincoln co., (1,723). In operation since 1891; owned by municipality. **Supply** from Niagara river $\frac{1}{2}$ mile distant, to tank; electric power used, with steam auxiliary; maximum, 80 h.p., average, 60 h.p.; pumping apparatus in duplicate. **Reservoir:** tank, 50,000 gal. **Distribution:** 5½ miles C. I. and galv. iron mains, 2 in. to 12 in.; 45 hydrants; 225 services, $\frac{3}{4}$ in. pipe. **Pressure:** ordinary, 40 lbs.; fire, 110 to 130 lbs. **Consumption:** 300,000 gal. **Financial:** total cost of plant, \$40,000; annual maintenance, \$1,629; revenue, \$2,491. **Rates:** flat rate, \$6 per dwelling; bath-room, \$5.00. Officer in charge: James Brown.

NORTH BAY, Nipissing dist., (8,534). In operation since 1891; owned by municipality. **Supply:** pumped from Trout lake, 3 miles distant, directly into mains and to reservoir; electric power used, with steam auxiliary. **Reservoir:** one, 1,378,000 gal. capacity. **Distribution:** 13 miles C. I. mains, 4 in. to 12 in.; 50 hydrants; 1,300 services, $\frac{1}{2}$ in. and $\frac{3}{4}$ in. galv. iron pipe. **Pressure:** ordinary, 45 to 60 lbs.; fire, 70 to 85 lbs. **Consumption:** 700,000 gal. **Financial:** total cost of plant, \$175,106; annual maintenance, \$14,502, interest, \$3,687; revenue, \$18,476. **Rates:** meter rate, 6c. to 8c. per 1,000 gal.; flat rate, \$7 and upward per dwelling. Officer in charge: J. H. Marceau, Chairman, Fire, Water and Light Committee.

NORTH TORONTO, York co., (5,500). In operation since 1890; owned by municipality. **Supply:** pumped from shallow wells, $\frac{3}{4}$ mile distant, to stand-pipe; steam power used, maximum, 100 h.p., average, 80 h.p.; boilers and pumps in duplicate. **Reservoir:** one stand-pipe, 198,000 gal. capacity. **Distribution:** 35 miles C. I. mains, up to 10 in.; 350 hydrants; 1,600 services, $\frac{1}{2}$ galv. iron pipe. **Pressure** 85 lbs. **Consumption:** 175,000 gal. **Financial:** cost of supply plant, \$15,000; cost of distribution system, \$158,400; annual maintenance, \$5,600; revenue \$6,510. **Rates:** flat rate, \$6 and upward per dwelling; bath-room, 75c. per inmate. Officer in charge: E. A. James, Municipal Engineer.

NORWICH, Oxford co., (1,250). In operation since 1906; owned by H. Webster. **Supply:** pumped from artesian wells in town, to tanks and mains, steam power used. **Distribution:** $\frac{1}{2}$ mile iron mains, 1½ in.

and 2 in.; 6 services, iron pipe. **Consumption:** 6,500 gal. **Financial:** cost of supply plant, \$200; cost of distribution system, \$350; annual maintenance, \$15; revenue from consumers, \$76; from public uses, \$90. **Rates:** flat rate, based on quantity required. Officer in charge: H. Webster.

OAKVILLE, Halton co., (2,400). In operation since 1910; owned by municipality. **Supply:** pumped from lake Ontario, 1 mile distant, through sedimentation basins to stand-pipe, or directly into mains; electric power used, maximum, 100 h.p., minimum, 80 h.p. **Reservoirs:** two sedimentation basins with a capacity of 3,600,000 gal.; one stand-pipe of 100,000 gal. capacity. **Distribution:** 7 miles of C. I. mains, 4 in. to 8 in.; 55 hydrants; 375 services, $\frac{3}{4}$ in. galv. iron pipe. **Pressure:** ordinary, 40 lbs; fire, 140 lbs. **Consumption:** 35,000 gal. **Financial:** cost of supply plant, \$14,000; cost of distribution system, \$56,000; annual maintenance, \$1,200, exclusive of interest; revenue from consumers, \$3,000; from public uses, \$2,475. **Rates:** flat rate, \$3 for first tap; bath-room \$8 (minimum installation, \$5 per year). Officer in charge: R. S. Wilson, Superintendent.

ORANGEVILLE, Dufferin co., (2,500). In operation since 1895; owned by municipality. **Supply:** by gravity from springs, $1\frac{1}{2}$ mile distant. **Reservoirs:** two, 42,000 gal. and 30,000 gal. **Distribution:** $8\frac{1}{2}$ miles of C. I. and galv. iron mains, $1\frac{1}{2}$ in. to 10 in.; 57 hydrants; 540 services. **Pressure:** ordinary, 20 to 60 lbs; fire, 85 to 100 lbs. **Financial:** total cost of plant, \$50,000; annual maintenance, \$2,000; annual revenue, \$3,000. **Rates:** flat rate, \$5 and upward per dwelling; bath-room, \$6. Officer in charge: Chas. King.

ORILLIA, Simcoe co., (7,000). In operation since 1885; owned by municipality. **Supply:** by gravity from springs, 1 mile distant, to pump house, thence pumped to reservoir and tank; electric power used, 100 h. p.; pumps are in duplicate, with steam auxiliary. **Reservoirs:** three collecting and receiving reservoirs, total capacity, 340,000 gal., two distributing reservoirs, total capacity, 220,000 gal. **Distribution:** C. I. and W. I. mains; 81 hydrants. **Pressure:** ordinary, 30 to 100 lbs; fire, up to 140 lbs. **Consumption:** 260,000 gal. **Financial:** total cost of plant, \$111,000; annual maintenance, \$4,000; revenue from consumers, \$7,500; revenue from public uses, \$2,010. **Rates:** flat rate, \$6 per dwelling; bath-room, \$3.60. Officer in charge: W. Kendall Greenwood.

OSHAWA, Ontario co., (7,300). In operation since 1905; owned by municipality. **Supply:** pumped from lake Ontario, 3 miles distant, to stand-pipe; steam power used, 100 h. p.; pumps in duplicate. **Reservoir:** one

stand-pipe, 65 feet high and of 200,000 gal. capacity. **Distribution:** 13 miles of C. I. and galvanized iron mains, 1½ in. to 12 in.; 81 hydrants; 1,002 services, lead and galvanized iron pipes. **Pressure:** ordinary, 45 lbs; fire 90 to 120 lbs. **Consumption:** 305,000 gal. **Financial:** cost of supply plant, \$26,245; cost of distribution system, \$58,607; annual maintenance (including interest), \$8,366; revenue from consumers \$10,767; revenue from public uses, \$1,944. **Rates:** meter rate (607 meters in use) 16c per 1,000 gal., plus meter rental; flat rate, \$6 per tap. Officer in charge: Frank Chappell, Town Engineer.

OTTAWA, Carleton co., (90,230). In operation since 1874; owned by municipality. **Supply:** pumped from Ottawa river, 1½ mile distant, directly into mains; water-power used, 1,200 to 1,300 h. p.; pumping apparatus in duplicate. **Distribution:** 154 miles of C. I. mains, 3 in. to 24 in.; 1,109 hydrants; 21,100 services, ½ in. to 1 in. lead pipe and up to 6 in. iron. **Pressure:** ordinary, 90 to 93 lbs; fire, 110 lbs. **Consumption:** 15,800,000 gal. **Financial:** total cost of plant, \$2,500,000; annual maintenance (exclusive of interest), \$90,000.; revenue, \$211,000. **Rates:** flat rate on assessment basis, \$6 on first \$1,000, plus \$1 per \$500 additional assessment; meter rate 6c to 8c per 1,000 gal.

OWEN SOUND, Grey co., (12,090). In operation since 1880; owned by municipality. **Supply:** by gravity from Sydenham river, 3 miles distant, and springs, 2½ miles distant. **Filter:** slow sand filter used on supply from river. **Reservoirs:** two, 600,000 gal. and 2,500,000 gal. capacity. **Distribution:** 18 miles of C. I. main, 4 in. to 12 in.: 123 hydrants; 2,560 services, lead pipe. **Pressure:** 70 lbs. **Consumption:** 600,000 gal. **Financial:** total cost of plant, \$225,900; annual maintenance, \$3,334; revenue from consumers, \$16,210; revenue from public uses, \$3,000. **Rates:** flat rate, \$3.33 per family; bath-room, \$3.33; meter rate, 13c per 1,000 gal.

PAISLEY, Bruce co., (827). In operation since 1888, owned by municipality. For fire protection only. **Supply:** pumped from Saugeen river directly into mains; steam power used. **Financial:** total cost of plant, \$6,500; annual maintenance, \$700.

PALMERSTON, Wellington co., (2,000). In operation since 1908; owned by municipality. **Supply:** pumped from artesian wells by compressed air to reservoir, thence by steam power to stand-pipe and mains; 20 h.p. used; boilers in duplicate. **Reservoirs:** one of 78,500 gal. capacity; stand-pipe, 100 feet high and of 785,000 gal. capacity. **Distribution:** 4 miles of C. I. mains, 6 in. to 10 in.; 46 hydrants; 205 services; ½ in.

galvanized iron pipe. **Pressure:** ordinary, 38 lbs; fire, 100 to 125 lbs. **Consumption:** 130,000 gal. **Financial:** cost of supply plant, \$20,000; cost of distribution system, \$23,000; annual revenue from consumers, \$3,997; revenue from public uses, \$1,200. **Rates:** flat rate, \$5 for first tap; bath-room, \$5. Officer in charge: W. J. Hancy, Superintendent.

PARIS, Brant co., (4,000). In operation since 1882; owned by municipality. **Supply:** pumped from springs, 1½ mile distant, to reservoir; electric power used, 18½ h.p.; pumps are in duplicate with steam auxiliary. **Reservoir:** one, 1,200,000 gal. capacity. **Distribution:** 8½ miles C. I. mains; 42 hydrants; 800 services. **Pressure:** 80 lbs. **Consumption:** 175,000 gal. **Financial:** total cost of plant, \$85,000; annual revenue, \$6,000. **Rates:** flat rate.

PARRY SOUND, Parry Sound dist., (4,000). In operation since 1892, owned by municipality. **Supply:** pumped from Georgian bay, ¾ mile distant, to stand-pipe; steam and electric power used, average, 45 h. p. **Reservoir:** one, stand-pipe, 25,000 gal. capacity. **Distribution:** 6½ miles C. I. mains, 3 in. to 10 in.; 60 hydrants; 650 services, ½ in. to 1 in. galvanized iron pipe. **Pressure:** ordinary, 80 lbs; fire, 120 lbs. **Consumption:** 175,000 gal. **Financial:** total cost of plant, \$62,000; annual maintenance, \$2,000; revenue, \$5,200. **Rates:** flat rate, \$3.50 and upward per family; meter rate, 4½c to 7c per 1,000 gal. Officer in charge: Geo. Murray, Engineer.

PEMBROKE, Renfrew co., (6,000). In operation since 1893; owned by municipality. **Supply:** pumped from Ottawa river (Allumette lake) 2½ miles distant, to stand-pipe, and directly into mains; electric power used with steam auxiliary; maximum, 120 h. p., average, 75 h. p. **Reservoir:** one, stand-pipe, 140,000 gal. capacity. **Distribution:** 10 miles of mains; 84 hydrants; 1,000 services, ½ in. to 1½ in. lead and galvanized iron pipe. **Pressure:** ordinary, 73 lbs; fire, 125 lbs. **Consumption:** 500,000 gal. **Financial:** total cost of plant, \$150,000; annual maintenance, \$5,500; interest on debentures, \$8,450; revenue from consumers, \$12,000; from public uses, \$1,500. **Rates:** \$6 per dwelling of 5 rooms; bath-room, \$6; meter rate, 10c to 30c per 1,000 gal. Officer in charge: A. J. Fortier, Town Clerk.

PENETANGUISHEENE, Simcoe co., (3,500). In operation since 1890; owned by municipality. **Supply:** pumped from springs, 600 ft. distant, to stand-pipe; steam power used, 150 h.p.; pumps and boilers in duplicate. **Reservoir:** stand-pipe of 300,000 gal. capacity. **Distribution:** 12 miles of C. I. mains; 4 in. to 10 in.; 58 hydrants; 480 services, ½ in. to

4 in. **Pressure:** ordinary, 89 lbs; fire, 110 lbs. **Consumption:** 325,000 gal. **Financial:** cost of supply plant, \$1,500; cost of distribution system, \$40,000; annual maintenance, \$3,500; revenue from consumers, \$4,000; from public uses, \$1,700. **Rates:** meter rate 15c to 50c per 1,000 gal; flat rate, \$5 and upward per dwelling; bath-room, 50c. per inmate.

PERTH, Lanark co., (3,300). In operation since 1897; owned by Canadian Electric and Water-Power Co. **Supply:** pumped from Tay river, $\frac{1}{2}$ mile distant, directly into mains; steam and electric power used; maximum, 200 h. p., average, 50 h. p.; pumping apparatus in duplicate. **Filter:** slow sand filter. **Distribution:** 9 miles of C. I. mains, 4 in. to 10 in.; 43 hydrants; 400 services, $\frac{1}{2}$ in. and $\frac{3}{4}$ in. galvanized iron and lead pipe. **Pressure:** ordinary, 50 lbs; fire, 150 lbs. **Consumption:** 500,000 gal. **Financial:** total cost of plant, \$105,000; annual maintenance, exclusive of interest, \$4,000; annual revenue, \$6,000. **Rates:** flat rate on assessment basis, \$5 and upward per dwelling; meter rate, 8c per 1,000 gal. Officer in charge: R. J. Smith, Superintendent.

PETERBOROUGH, Peterborough co., (19,300). In operation since 1882; owned by municipality. **Supply:** pumped from Otonabee river, $2\frac{1}{2}$ miles distant, directly into mains; water-power used, 450 to 500 h. p. **Distribution:** $36\frac{1}{2}$ miles of C. I. mains, 3 in. to 20 in.; 262 hydrants; 3,222 services, lead and galvanized iron pipe, C. I. for large services. **Pressure:** ordinary, 75 lbs; fire, up to 130 lbs. **Consumption:** 2,500,000 gal. **Financial:** total cost of plant, \$466,683; annual maintenance, \$15,427; revenue, \$43,695. **Rates:** flat rate, \$4 and upward per dwelling, according to number of rooms; bath-room, \$5; meter rate, $13\frac{1}{2}$ c to 40c per 1,000 gal. Officer in charge: A. G. Fawcett.

PETROLIA, Lambton co., (4,000). In operation since 1896; owned by municipality. **Supply:** pumped from lake Huron, 13 miles distant, to stand-pipe; steam power used, 60 to 100 h. p.; pumps in duplicate. **Distribution:** $13\frac{1}{2}$ miles of C. I. mains, 2 in. to 12 in.; 100 hydrants; 1,600 services, lead pipe. **Pressure:** ordinary, 32 lbs; fire, 28 to 35 lbs. **Consumption:** 586,544 gal. **Financial:** cost of supply plant, \$131,760; cost of distribution system, \$58,672; annual maintenance, \$4,737; revenue from consumers, \$11,868; from public uses, \$4,000. **Rates:** flat rate, \$6 per dwelling; bath-room, \$6, also has meter rate. Officer in charge: John Bright, Engineer.

PICTON, Prince Edward co., (4,000). In operation since 1889; owned by municipality. **Supply:** pumped from bay of Quinte, $\frac{1}{2}$ mile distant, to reservoir; steam power used, average, 60 h. p.; pumps in duplicate. **Reservoir:** one, 300,000 gal. capacity. **Distribution:** 5 miles of C. I.

mains, 2 in. to 8 in.; 40 hydrants; 275 services, galvanized iron pipe. **Pressure:** ordinary, 75 lbs; fire, 90 lbs. **Consumption:** 350,000 gal. **Financial:** cost of supply plant, \$10,000; cost of distribution system, \$20,000; annual maintenance, \$3,000; revenue, \$3,000. **Rates:** flat rate, \$9 per dwelling; meter rate, 12·8c to 19·2c per 1,000 gal. Officer in charge: S. O. Crandell.

POR T ARTHUR, Thunder Bay district, (16,000). In operation since 1903, owned by municipality. **Supply:** pumped from lake Superior, 3 miles distant, directly into mains, and to stand-pipe; water-power used, maximum, 200 h. p., average, 150 h. p.; electric pump for emergencies. **Reservoir:** one, stand-pipe, 200,000 gal. capacity. **Distribution:** 25 miles of C. I. and wooden mains, 4 in. to 12 in.; 223 hydrants; 2,000 services, lead pipe. **Pressure:** ordinary, 85 to 95 lbs; fire, 130 lbs. **Consumption:** 1,800,000 gal. **Financial:** cost of supply plant, \$13,500; cost of distribution system, \$600,000; annual maintenance, \$11,222; revenue from consumers, \$32,579; from public uses, \$8,298. **Rates:** flat rate \$9 and upward per dwelling; meter rate, 11·2c and 16c per 1,000 gal. Officer in charge: L. M. Jones, City Engineer.

POR T CARLING, Muskoka district, (350). In operation since 1902; private plant operated co-operatively by consumers. **Supply:** pumped from Indian river, 1200 feet distant, to reservoirs; wind power and gasoline engine used, 3 h.p. **Reservoirs:** two, 5,000 gal. capacity each. **Distribution:** 1 mile of galvanized iron mains, 1 in. to 2½ in.; 21 services, ¼ in. galvanized iron pipe. **Financial:** total cost of plant, \$1,275; annual maintenance, \$75. **Rates:** flat rate, \$12 per dwelling. Officer in charge: W. F. Hanna, Secretary.

POR T COLBORNE, Welland co., (1,500). In operation since 1898; owned by municipality. **Supply:** pumped from lake Erie, ½ mile distant, to stand-pipe; gas and electric power used; pumping apparatus in duplicate. **Reservoir:** one stand-pipe, 12 ft. by 80 ft., 56,500 gal. **Distribution:** 5½ miles of C. I. and galvanized iron mains; 36 hydrants; 350 services, ½ in. and ¾ in. pipe. **Pressure:** ordinary, 40 lbs.; fire, up to 85 lbs. **Consumption:** 75,000 gal. **Financial:** total cost of plant, \$30,000; annual maintenance, \$1,467; revenue, \$2,183. **Rates:** flat rate, \$6 per dwelling. Officer in charge: Frank D. Noble.

POR T ELGIN, Bruce co., (1,300). In operation since 1907; owned by municipality. **Supply:** pumped from springs, 1½ mile distant, to stand-pipe; steam power used, average, 75 h.p.; boilers in duplicate. **Reservoir:** natural reservoir, 400,000 gal. capacity. **Distribution:** 2½ miles of C. I.

and galvanized iron mains, 2 in., 6 in. and 8 in.; 33 hydrants; 200 services, $\frac{1}{2}$ in. galvanized iron pipe. **Pressure:** 34 to 96 lbs. **Financial:** total cost of plant, \$42,000; annual maintenance, \$900; revenue, \$775. **Rates:** flat rate, \$3 per dwelling; bath-room, \$6. Officer in charge: D. Geddes, Clerk.

POR T HOPE, Durham co., (5,000). In operation since 1896; owned by municipality. **Supply:** pumped from lake Ontario, $\frac{1}{2}$ mile distant, to stand-pipe; steam power used, maximum, 100 h.p., average, 75 h.p.; pumps and boilers in duplicate. **Filter:** filtering basins. **Distribution:** 10 $\frac{1}{2}$ miles of C. I. mains, 4 in. to 12 in.; 90 hydrants; 565 services, $\frac{3}{4}$ in. to 2 in. pipe. **Pressure:** ordinary, 110 lbs.; fire, 110 to 125 lbs. **Consumption:** 140,000 gal. **Financial:** total cost of plant, \$105,980; annual maintenance, \$9,346; revenue, \$6,533. **Rates:** flat rate, \$5 and \$6 per tap; meter rate, 10c. to 25c. per 1,000 gal. Officer in charge: R. Gray, Superintendent.

POR T PERRY, Ontario co., (1,200). In operation since 1905; owned by municipality; water not used for drinking. **Supply:** pumped from Scugog lake, $\frac{1}{2}$ mile distant, directly into mains and to tank; steam power used. **Distribution:** $\frac{3}{4}$ mile of 6 in. iron mains; 6 hydrants; 25 services. **Pressure:** ordinary, 70 lbs.; fire, 100 lbs. **Financial:** cost of supply plant, \$10,000; cost of distribution system, \$2,000; annual revenue from consumers, \$510; from public uses, \$450. **Rates:** flat rate, \$5 and upward per dwelling; bath-room \$4. Officer in charge: R. J. Tinsley.

PRESCOTT, Grenville co., (3,000). In operation since 1900; owned by municipality. **Supply:** pumped from St. Lawrence river, 400 feet distant, to mains and tank; steam power used, maximum, 60 h.p. **Reservoir:** one elevated tank, 87,960 gal. capacity. **Distribution:** 7 $\frac{1}{2}$ miles of C. I. mains, 4 in. to 12 in.; 92 hydrants; 538 services, lead pipe. **Pressure:** ordinary, 60 to 80 lbs.; fire, 120 lbs. **Consumption:** 136,363 gal. **Financial:** cost of supply plant, \$6,900; cost of distribution system, \$55,732; annual maintenance, \$6,234; revenue from consumers, \$5,034; from public uses, \$3,031. **Rates:** meter rate, 9·6c. to 35·2c. per 1,000 gal.; flat rate, \$5.40 per tap. Officer in charge: R. R. Dowsley, Superintendent.

PRESTON, Waterloo co., (3,300). In operation since 1907; owned by municipality. **Supply:** by gravity from springs, $\frac{1}{2}$ mile distant, to reservoir, thence pumped to stand-pipe; steam power used, 35 h.p.; pumps in duplicate. **Reservoir:** stand-pipe of 127,000 gal., reservoir of 65,000 gal. capacity. **Distribution:** 4 in. to 12 in. mains; 62 hydrants;

400 services, lead and galvanized iron pipe. **Pressure:** ordinary, 70 lbs.; fire, 120 lbs. **Consumption:** 150,000 gal. **Financial:** cost of supply plant, \$10,897; cost of distribution system, \$51,477; annual maintenance, \$5,074; revenue, \$3,300. **Rates:** flat rate, \$6 per dwelling, \$7 for bath-room; meter rate, 6c. to 30c. per 1,000 gal. Officer in charge: T. R. Waugh, Superintendent.

RAINY RIVER, Rainy River district, (2,000). In operation since 1910; owned by municipality. **Supply:** pumped from Rainy river, $\frac{3}{4}$ mile distant, directly into mains; gasoline engine used, 25 h.p. **Reservoirs:** two of 6,000 gal. each. **Distribution:** 3 miles of C. I. mains, 6 in. and 8 in.; 32 hydrants; 95 services. **Pressure:** 100 lbs. **Consumption:** 175,000 gal. **Financial:** total cost of plant, \$33,000; annual maintenance, \$3,500; revenue, \$4,000. **Rates:** flat and meter rates; flat rate, \$9 and upward per dwelling; bath-room, \$9; meter rate, 8c. to 45c. per 1,000 gal. Officer in charge: S. Sage, Superintendent.

RENFREW, Renfrew co., (3,700). In operation since 1897; owned by municipality. **Supply:** pumped from Bonnechere river, $\frac{1}{2}$ mile distant to stand-pipe; electric power used, average, 50 h.p.; reserve steam pumping plant. **Filter:** mechanical filter. **Distribution:** 12 miles of C. I. mains, 2 in. to 12 in.; 103 hydrants; 730 services, lead and galvanized iron pipes. **Pressure:** ordinary, 80 lbs.; fire, 130 lbs. **Consumption:** 500,000 gal. **Financial:** cost of supply plant, \$24,000; cost of distribution system, \$57,000; annual maintenance (including interest), \$5,630; revenue from consumers, \$9,000; from public uses, \$2,400. **Rates:** flat rate, \$5 and upward per dwelling, according to number of rooms; bath-room, \$5. Officer in charge: J. R. Stewart, Superintendent.

ROCKLAND, Russell co., (3,000). Owned by W. C. Edwards & Co. **Supply:** pumped from Ottawa river, $\frac{1}{2}$ mile distant, to mains and tank; steam power used, 45 h.p.; pumps in duplicate. **Distribution:** 2 miles of C. I. and W. I. mains, $3\frac{1}{2}$ in. to 6 in.; 24 hydrants; 400 services, W. I. pipes. **Pressure:** ordinary, 40 lbs.; fire, 150 lbs. **Consumption:** 50,000 gal. **Financial:** total cost of plant, \$40,000; annual revenue from public uses, \$490. Officer in charge: Henry Taylor.

ST. CATHARINES, Lincoln co., (13,500). In operation since 1879; owned by municipality. **Supply:** by gravity from Welland canal, 7 miles distant. **Reservoirs:** two of 55 and 10 acres area, respectively. **Distribution:** $44\frac{1}{2}$ miles of C. I. and galvanized iron mains, 1 $\frac{1}{4}$ in. to 30 in.; 326 hydrants; 3,435 services, lead, galvanized iron and C. I. pipes, 1 $\frac{1}{2}$ in. to 8 in. **Pressure:** 50 to 110 lbs. **Consumption:** 2,750,000 gal. **Financial:** total cost of plant, \$646,546; annual maintenance, \$7,000;

revenue from consumers, \$35,457; revenue from public uses, \$7,150. **Rates:** flat rate, \$3.50 to \$6 per dwelling; bath-room, \$5; meter rate, 4.8c. to 19.2c. per 1,000 gal.

ST. GEORGE, Brant co., (550). In operation since 1888; owned by St. George Water Supply Co. **Supply:** by gravity from springs, $\frac{1}{2}$ mile distant. **Reservoir:** one, 1,760 gal. capacity. **Distribution:** 3 miles of iron mains, 1 in. to $2\frac{1}{2}$ in.; 59 services, $\frac{3}{4}$ in. and 1 in. pipe. **Financial:** total cost of plant, \$2,198; annual maintenance, \$163; annual revenue, \$398. **Rates:** flat rate, \$6 per dwelling. Officer in charge: J. L. Addison, Manager.

ST. THOMAS, Elgin co., (15,453). In operation since 1890; owned by municipality. **Supply:** pumped from Kettle creek and artesian wells, $1\frac{1}{4}$ mile distant, directly into mains; steam power used, maximum, 200 h.p., average, 100 h.p.; pumps in duplicate. **Filter:** "Hyatt" filter. **Reservoirs:** two of a total capacity of 25,000,000 gal. **Distribution:** 29 miles of C. I. and W. I. mains, $\frac{3}{4}$ in. to 14 in.; 175 hydrants; 3,656 services, W. I. and lead pipes. **Financial:** annual maintenance, \$19,211; revenue, \$38,755. **Rates:** flat rate, \$3.50 and upward per dwelling; bath-room, \$3.50; meter rate, 8c. to 16c. per 1,000 gal. Officer in charge: S. O. Perry, Secretary.

SANDWICH, Essex co., (2,106). In operation since 1892; owned by municipality. **Supply:** from the Windsor, Ont., system (*q.v.*). **Distribution:** 3 miles of C. I. and galvanized iron mains, 2 in. and 4 in.; 40 hydrants; 330 services. **Financial:** annual maintenance, \$2,500; revenue, \$2,766. **Rates:** flat rate, \$5 per dwelling; bath-room, \$3; meter rate, 21c. per 1,000 gal.

SARNIA, Lambton co., (9,810). In operation since 1876; owned by municipality. **Supply:** pumped from St. Clair river, $1\frac{1}{2}$ mile distant, directly into mains; steam power used, 150 h.p.; pumps in duplicate. **Distribution:** $32\frac{1}{4}$ miles of C. I. and W. I. mains, $\frac{1}{2}$ in. to 20 in.; 188 hydrants; 2,799 services, $\frac{1}{2}$ in. to 3 in. lead and galvanized iron pipes. **Pressure:** ordinary, 60 lbs.; fire, 100 lbs. **Consumption:** 3,500,000 gal. **Financial:** total cost of plant, \$225,000; annual maintenance, \$8,550; annual revenue, \$23,000. **Rates:** flat rate, \$3 and upward per dwelling; bath-room, \$4. Officer in charge: Richard Bell, Water-works Engineer.

SAULT STE. MARIE, Algoma district, (11,000). In operation since 1894; owned by the Tagona Water and Light Co. **Supply:** pumped from St. Mary river directly into mains; water power used, maximum, 300 h.p., average, 200 h.p.; pumping apparatus in duplicate. **Distribution:**

25½ miles of C. I. mains, 4 in. to 24 in.; 180 hydrants; 2,200 services, galvanized iron pipe. **Pressure:** ordinary, 80 lbs.; fire, 100 lbs. **Consumption:** 3,000,000 gal. **Financial:** total cost of plant, \$312,478; annual maintenance, \$2,313; revenue, \$37,734. **Rates:** flat and meter rates; flat rate, \$5 and upward per dwelling; bath-room, \$4; meter rate, 8c. to 24c. per 1000 gal. Officer in charge: J. M. McPherson, General Manager.

SEAFORTH, Huron co., (2,145). In operation since 1876; owned by municipality. **Supply:** pumped from Silver creek, ¼ mile distant, directly into mains; steam power used, maximum, 85 h.p., average, 60 h.p.; pumps and boilers in duplicate. **Distribution:** 3 miles of mains, 13 hydrants; 40 services. **Pressure:** ordinary, 60 lbs.; fire, 110 lbs. **Consumption:** 200,000 gal. **Financial:** total cost of plant, \$15,000; annual maintenance, \$1,100; revenue, \$750. **Rates:** flat rate, \$5 to \$30 per service. Water used only for fire protection, industrial and lawn-watering purposes.

SHELBURNE, Dufferin co., (1,120). In operation since 1889; owned by municipality. **Supply:** pumped from wells to steel tank; gasoline engines and wind power used, 6 to 8 h.p. **Reservoir:** one tank, 120,000 gal. capacity. **Distribution:** 3 miles of iron mains, 2 in. and 10 in.; 23 hydrants; 265 services, iron pipe. **Pressure:** 65 lbs. **Consumption:** 10,000 gal. **Financial:** total cost of plant, \$32,500; annual maintenance, \$700; revenue, \$1,300. **Rates:** flat rate, \$5 per dwelling; bath-room, \$2. Officer in charge: Thos. Walley, Clerk.

SIMCOE, Norfolk co., (3,800). In operation since 1908; owned by municipality. **Supply:** pumped from springs, ½ mile distant, to stand-pipe, and directly into mains; gas engines used, 50 to 80 h.p.; pumping apparatus in duplicate. **Reservoir:** stand-pipe, 20 ft. by 65 ft.; 127,000 gal. **Distribution:** 10¾ miles of C. I. mains, 1½ in. to 8 in.; 76 hydrants; 518 services, ¼ in. lead and galvanized iron pipes. **Pressure:** ordinary, 60 lbs.; fire, 85 to 125 lbs. **Consumption:** 87,800 gal. **Financial:** total cost of plant \$81,019; annual maintenance, \$1,592; debenture interest, \$4,723; revenue, \$7,801. **Rates:** meter rate 8c. to 24c. per 1000 gal. flat rate, \$6 and upward per dwelling. Officer in charge: W. C. McCall, Superintendent.

SMITHS FALLS, Lanark co., (6,500). In operation since 1899; owned by municipality. **Supply:** pumped from Rideau river directly into mains; water and steam power used; maximum, 100 h.p., average, 75 h.p.; steam and electric pumps for emergencies. **Distribution:** 3 miles of

C. I. mains, 4 in. to 10 in.; 92 hydrants; 800 services. **Pressure:** ordinary, 54 lbs.; fire, 100 lbs. **Consumption:** 500,000 gal. **Financial:** total cost of plant, \$130,000; annual maintenance, \$5,500; revenue, \$13,000. **Rates:** flat rate, \$5 and upward per dwelling; bath-room, \$5.50; meter, 5c. per 1,000 gal. A private company had supplied the town from 1887 to 1899.

SOUTHAMPTON, Bruce co., (1,800). In operation since 1901; owned by municipality. **Supply:** pumped from wells, $\frac{1}{2}$ mile distant, to stand-pipe; steam and electric power used, 80 h. p. **Reservoir:** stand-pipe 110 ft. high of 138,000 gal. capacity. **Distribution:** 4 miles of C. I. mains, 4 in. to 8 in.; 33 hydrants; 252 services, galvanized iron pipe. **Pressure:** ordinary, 67 lbs; fire, 110 lbs. **Consumption:** town, 100,000 gal.; fish hatchery, 125,000 gal. **Financial:** total cost of plant, \$40,000; annual maintenance, \$1,920; revenue, \$2,200. **Rates:** flat rate, \$4 per dwelling; bath room, \$5; meter rate, 18c. per 1,000 gal. Officer in charge: Geo. W. Martin.

STAYNER, Simcoe co., (1,100). In operation since 1899; owned by municipality. **Supply:** by gravity from springs, 3 miles distant. **Distribution:** C. I. mains; 14 hydrants; services, $\frac{1}{2}$ in. galvanized iron. **Pressure:** 65 lbs. **Consumption:** 100,000 gal. **Financial:** annual maintenance, \$300; revenue, \$850. **Rates:** flat rate, \$4 for first tap.

STEELTON, Algoma district, (3,954). In operation since 1906; distribution system only owned by municipality. **Supply:** pumped from power canal, 1 mile distant, and supplied to town by Tagona Water and Light Co. **Distribution:** $7\frac{3}{4}$ miles of C. I. mains, 4 in. to 10 in.; 2 in. mains in addition to this; 41 hydrants; 500 services, $\frac{1}{2}$ in. galvanized iron pipe. **Pressure:** ordinary, 90 lbs; fire, 100 lbs. **Consumption:** 115,000 gal. **Financial:** cost of distribution system, \$75,000; annual revenue, \$5,684. **Rates:** flat rate, \$8 and upward per dwelling. Officer in charge: John Roberts, Superintendent.

STOUFFVILLE, York co., (1,000). In operation since 1897; owned by municipality. **Supply:** by gravity from springs, 4 miles distant. **Reservoir:** one of 700,000 gal. capacity. **Distribution:** 4 miles of C. I. mains, 4 in. to 12 in.; 38 hydrants; 180 services, $\frac{1}{2}$ in. pipe. **Pressure:** ordinary, 60 lbs; fire, 48 to 56 lbs. **Financial:** total cost of plant, \$25,000; annual maintenance, \$78; revenue, \$737. **Rates:** flat rate, \$4 per dwelling; bath-room, \$2.

STRATFORD, Perth co., (14,779). In operation since 1883; owned by municipality. **Supply:** pumped from Avon river, $\frac{1}{2}$ mile distant, and

from six artesian wells, through filter, directly into mains; electric and steam power used, maximum, 70 h. p., average, 22 h. p. **Filter:** mechanical filter used. **Distribution:** 27½ miles of C. I. and W. I. mains, 2 in. to 12 in.; 187 hydrants; 1,500 services, lead and galvanized iron pipes. **Pressure:** ordinary, 30 lbs; fire, 100 to 120 lbs. **Consumption:** 1,000,000 gal. **Financial:** total cost of plant, \$231,780; annual maintenance, \$14,319; revenue, \$34,989. **Rates:** flat rate, \$5 to \$12 per dwelling, bath-room, \$7.50; meter rate, 9.6c to 67c per 1000 gal. Officer in charge: P. McNab, Superintendent.

STRATHROY, Middlesex co., (3,100). In operation since 1903; owned by municipality. **Supply:** pumped from Sydenham river, 200 ft. distant, to stand-pipe; steam power used, 25 h. p. **Reservoir:** one of 150,000 gal. capacity. **Distribution:** 6 miles of C. I. mains, 4 in. to 8 in.; 40 hydrants; 170 services, galvanized iron pipe. **Pressure:** ordinary, 35 lbs; fire, 100 lbs. **Consumption:** 250,000 gal. **Financial:** total cost of plant, \$45,000; annual maintenance, \$200; revenue from consumers, \$1,000; from public uses, \$1,300. **Rates:** flat rate, \$1 per tap; bath-room, \$6.50; meter rate, 5c per 1,000 gal. Officer in charge: Archie McLachlin, Superintendent.

STURGEON FALLS, Nipissing district, (2,282). In operation since 1903; pumping station owned by Imperial Paper Mills, Ltd.; remainder of system owned by municipality. **Supply:** pumped from Sturgeon river, directly into mains; water-power used. **Filter:** mechanical filter used. **Distribution:** 5½ miles of C. I. and galvanized iron mains, 4 in. to 10 in.; 47 hydrants; 485 services. **Pressure:** ordinary, 40 lbs; fire, 100 lbs. **Financial:** total cost of plant, \$46,000; annual maintenance, \$1,267; revenue, \$3,149. **Rates:** flat rate used. Officer in charge: O. Forcier, Superintendent.

SUDBURY, Sudbury district, (4,000). In operation since 1895; owned by municipality. **Supply:** pumped from Ramsay lake, 1 mile distant, to elevated tank; electric power used, maximum, 200 h. p., average, 100 h. p.; 300 h. p. steam auxiliary pumping plant. **Reservoir:** elevated tank of 65,000 gal. capacity. **Distribution:** 10 miles of C. I. mains, 4 in. to 12 in.; 48 hydrants; 650 services, ½ in. to 4 in. galvanized iron and lead pipes. **Pressure:** ordinary, 75 lbs; fire 120 lbs. **Consumption:** 600,000 gal. **Financial:** total cost of plant, \$100,000; annual maintenance, \$7,960; annual revenue, \$14,507. **Rates:** flat rate, \$10.66 and upward per dwelling; bath-room, \$5.32; meter rate, 6c and 8c per 1,000 gal. Officer in charge: R. H. Martindale, Superintendent.

TEESWATER, Bruce co., (810). In operation since 1889; owned by municipality. **Supply:** pumped from Teeswater river directly into mains; steam power used, 80 h. p. **Distribution:** 1 mile of C. I. mains, 4 in. and 6 in.; 9 hydrants. **Pressure:** fire, 140 lbs. **Financial:** total cost of plant, \$12,000; annual maintenance, \$400. Only used for fire protection. Officer in charge: Walter Rose.

THESSALON, Algoma district, (1,852). In operation since 1896; owned by municipality. **Supply:** pumped from lake Huron 1,600 ft. distant, directly into mains; steam power used, maximum, 250 h. p., average, 30 h. p.; pumps and boilers in duplicate. **Distribution:** 4 miles of C. I. mains, 4 in. and 6 in.; 24 hydrants; 311 services, $\frac{1}{2}$ in. to 1 in. pipe. **Pressure:** ordinary, 60 lbs; fire, 120 lbs. **Financial:** cost of supply plant, \$5,000; cost of distribution system, \$20,000; annual maintenance, \$2,300; revenue, \$2,855. **Rates:** flat rate, \$6 and upward per dwelling, bath-room, \$4. Officer in charge: E. G. Scott, Clerk.

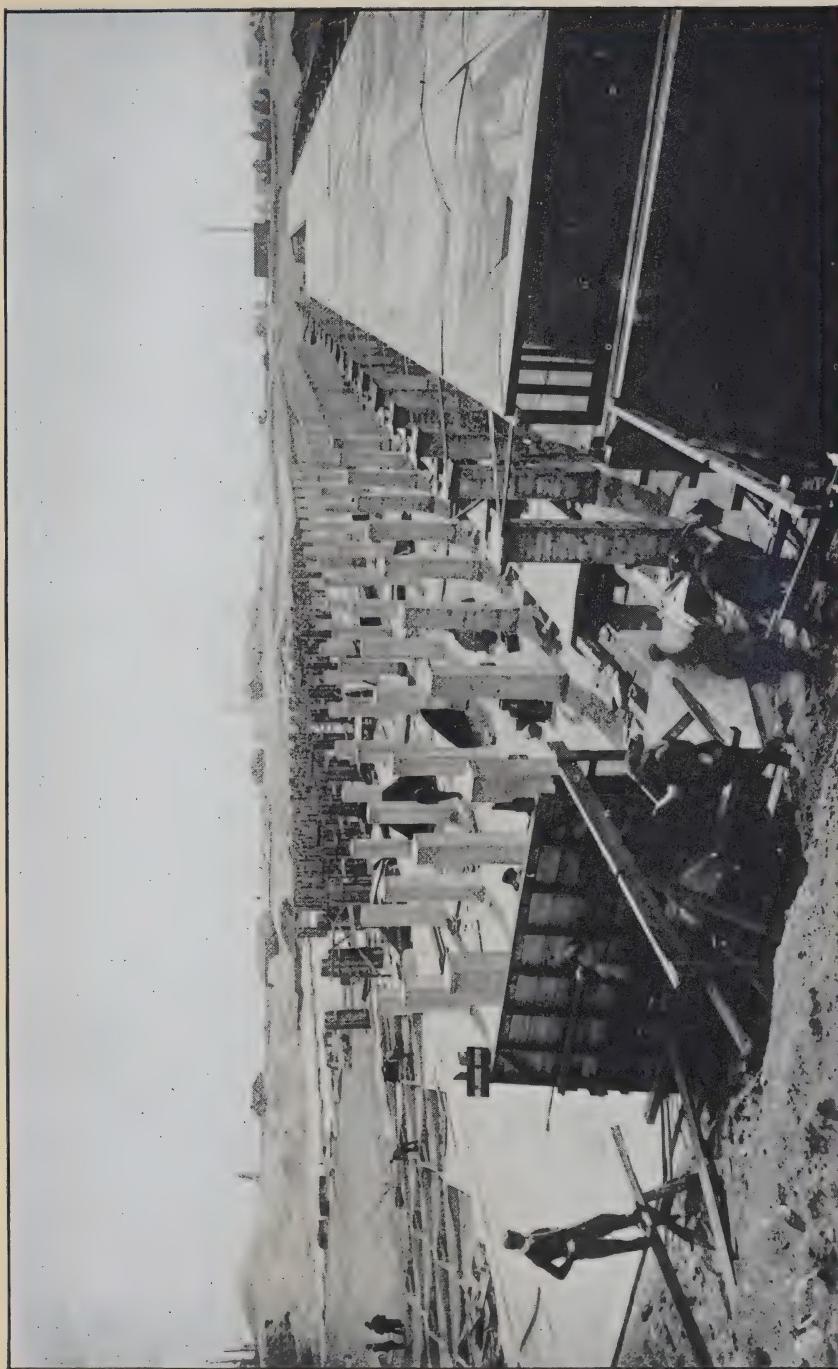
THOROLD, Welland co., (2,300). In operation since 1908; owned by municipality. **Supply:** by gravity from Welland canal, 1 mile distant, to pumping station, thence pumped to stand-pipe; water-power used, 50 to 100 h. p. **Reservoir:** stand-pipe, 100,000 gal. capacity. **Distribution:** 8 miles of C. I. mains 4 in. to 12 in.; 64 hydrants; 250 services, $\frac{3}{4}$ in. galvanized iron pipe. **Pressure:** ordinary, 60 lbs; fire, 160 lbs. **Consumption:** 75,000 gal. **Financial:** cost of supply plant, \$10,000; cost of distribution system, \$80,000; annual revenue, \$1,600. **Rates:** flat rate, \$4 to \$6 per dwelling; bath-room, \$5; meter rate, 4.8c to 19.2c per 1000 gal.

TILBURY, Kent co., (1,406). In operation since 1902; pumping system owned by Michigan Central railroad; distribution by town. **Supply:** pumped from Baptiste creek, $3\frac{1}{4}$ miles distant, to tank; gasoline engines used, 55 h. p. **Reservoirs:** two, 79,000 gal. and 90,000 gal. capacity. **Distribution:** 3 miles of C. I. mains, 4 in. and 6 in.: 20 hydrants; 121 services, $\frac{3}{4}$ in. to $1\frac{1}{2}$ in. **Pressure:** ordinary, 15 lbs; fire, 80 to 100 lbs. **Consumption:** 77,168 gal. **Financial:** cost of distribution system, \$15,000; annual maintenance, \$1,200; revenue from consumers, \$808, from public uses, \$980. **Rates:** flat rate, \$5 per dwelling; bath-room, \$5. Water is not used for drinking or cooking.

TILLSONBURG, Oxford co., (3,000). There are two systems; one owned by municipality for fire protection, and the other owned by the Tillsonburg Water-Works Co., for domestic purposes.

FIRE PROTECTION SYSTEM: in operation since 1875. **Supply:** water pumped from springs, 5 miles distant, directly into mains; water

PLATE IV



Courtesy, Dept. of Works, Toronto

TORONTO FILTRATION PLANT.—FILTER MASONRY CONSTRUCTION.

power used, 75 h. p. **Distribution:** 5 miles of C. I. mains, 4 in. and 6 in.; 43 hydrants. **Pressure:** 110 lbs. to 150 lbs. **Financial:** total cost of plant, \$30,000; annual maintenance, \$500.

DOMESTIC SYSTEM: in operation since 1895. **Supply:** pumped from spring, 1 mile distant, to reservoir; steam, gasoline, and water-power used, maximum, 60 h. p., average, 15 h. p. **Reservoir:** one of 18,000 gal. capacity. **Distribution:** 5½ miles of mains, ½ in. to 6 in.; 380 services. **Pressure:** 20 lbs. **Consumption:** 125,000 gal. **Financial:** cost of supply plant, \$9,760; cost of distribution system, \$21,000; annual maintenance, \$1,800; revenue, \$3,500. **Rates:** both flat and meter rates with a minimum charge of \$6 per year. Officer in charge: Geo. W. Tillson.

TORONTO, York co., (425,000). In operation since 1841; rebuilt in 1873-1878; owned by municipality. **Supply:** pumped through filters from lake Ontario, 4 miles distant, directly into mains and reservoir; steam and electric power used, 3,000 h. p. each. **Filter:** slow sand filter. **Reservoir:** one of 33,000,000 gal. capacity. **Distribution:** 434 miles of C. I. mains; 4,965 hydrants; 83,605 services. **Pressure:** ordinary, 40 lbs. to 80 lbs; fire, in business district, 300 lbs. **Consumption:** 42,131,637 gal. **Financial:** annual maintenance, \$873,000; revenue from consumers, \$720,321; from public uses, \$101,882. **Rates:** both meter and flat; meter rate, 6½c to 15c per 1,000 gal.; flat rate, \$2 and upward per dwelling, according to number of rooms; bath-room, \$2.50. Officer in charge: R. C. Harris, Commissioner of Works.

TRENTON, Hastings co., (5,000). In operation since 1890; owned by the Trenton Electric and Water Co. **Supply:** pumped from springs, ½ mile distant, to stand-pipe; electric power used, 15 h. p.; steam auxiliary plant. **Reservoir:** stand-pipe of 20,000 gal. capacity. **Distribution:** 8 miles of C. I. and W. I. mains, 4 in.; 3 hydrants; 300 services, galvanized iron pipe. **Pressure:** 65 lbs. **Consumption:** 250,000 gal. **Financial:** cost of supply plant, \$25,000; cost of distribution system, \$25,000; annual maintenance, \$1,000; revenue, \$4,500. **Rates:** flat rate, \$1 to \$5 per dwelling; meter rate, 6.4c to 16c per 1000 gal. Officer in charge: A. T. Hicks, Local Manager.

UXBRIDGE, Ontario co., (1,700). In operation since 1874; owned by municipality. **Supply:** pumped from springs directly into mains; water-power used, 40 h. p. **Distribution:** 5 miles of C. I. mains, 6 in.; 17 hydrants. **Pressure:** ordinary, 100 lbs; fire, 125 lbs. **Financial:** total cost of plant, \$15,000; annual maintenance, \$500. For fire protection only.

WALKERTON, Bruce co., (3,075). In operation since 1891; owned by municipality. **Supply:** pumped from springs, 1 mile distant, to reservoir and into mains; steam power used, maximum, 50 h. p., average, 6 h. p.; boilers in duplicate. **Reservoir:** one of 300,000 gal. capacity. **Distribution:** C. I. mains, 4 in. to 8 in.; 52 hydrants; 360 services, galvanized iron pipe. **Pressure:** ordinary, 55 lbs; fire, up to 130 lbs. **Financial:** total cost of plant, \$45,000; annual maintenance, \$2,744; revenue, \$4,000. **Rates:** flat rate, \$4 and upward per dwelling according to number of rooms; bath room, \$5.

WALKERVILLE, Essex co., (3,500). Population of 5,000 served. In operation since 1880; owned by Walkerville Water Co., Ltd. **Supply:** by gravity from Detroit river, 300 ft. distant, to screen well, thence pumped directly into mains; steam power used, maximum, 380 h. p., average, 80 h. p. **Distribution:** 17 miles of C. I. mains, 4 in. to 16 in.; 173 hydrants; 1,050 services, $\frac{1}{2}$ in. to 6 in. lead and galvanized iron pipes, large services C. I. **Pressure:** ordinary, 65 to 70 lbs; fire, 110 to 130 lbs. **Consumption:** 1,962,000 gal. **Financial:** cost of distribution system, \$76,000. **Rates:** meter rate, 6c to 8c per 1000 gal.; flat rate, \$4.80 per dwelling; bath-room, \$1.60. Officer in charge: S. C. Robinson, Secretary-Treasurer.

WATERLOO, Waterloo co., (4,800). In operation since 1889; owned by municipality, since 1899. **Supply:** pumped from artesian wells at plant to stand-pipe and directly into mains; electric power used with steam auxiliary; maximum, 100 h. p., average, 50 h. p.; mains can also be supplied from Berlin system. **Reservoirs:** three of a total capacity of 500,000 gal.; stand-pipe of 250,000 gal. capacity. **Distribution:** 9 miles of C. I. and W. I. mains, 1 $\frac{1}{4}$ in. to 12 in.: 84 hydrants; 780 services, $\frac{1}{2}$ in. galvanized iron and lead pipes. **Pressure:** ordinary, 80 lbs; fire, 110 lbs. **Consumption:** 450,000 gal. **Financial:** cost of supply plant, \$41,000; cost of distribution system, \$59,000; annual maintenance, \$5,065; interest \$2,841; revenue from consumers, \$8,914; from public uses, \$2,440. **Rates:** flat and meter rates; flat rate, \$3.75 for first tap; bath-room, \$6; meter rate, 5 $\frac{1}{2}$ c to 22 $\frac{1}{2}$ c per 1,000 gal. Officer in charge: F. S. Kumpf, Manager.

WELLAND, Welland co., (4,500). In operation since 1888; owned by municipality. **Supply:** by gravity from Welland canal, 1,900 ft. distant, to pumping station; thence pumped directly into mains; water power used, maximum, 170 h. p., average, 40 h. p.; steam auxiliary plant. **Distribution:** 14 $\frac{1}{2}$ miles of C. I. and W. I. mains, $\frac{3}{4}$ in. to 16 in.; 100 hydrants; 1,270 services, $\frac{1}{2}$ in. to 2 in. W. I. pipe. **Pressure:** ordinary,

60 lbs; fire, 110 lbs. **Consumption:** 782,940 gal. **Financial:** total cost of plant, \$141,820; annual maintenance, including interest, \$13,128; revenue, \$15,724. **Rates:** flat rate, \$4 and upward per dwelling, according to number of rooms; bath-room, \$3. Officer in charge: Jas. J. Haffey, Superintendent.

WESTON, York co., (1,700). In operation since 1911; owned by municipality. **Supply:** pumped from Humber river, 1 mile distant, to stand-pipe and mains; electric power used. **Filter:** mechanical filter. **Reservoir:** stand-pipe, 20 ft. by 80 ft. **Distribution:** 4 miles of iron mains; 60 hydrants; services are not all laid yet. **Financial:** total cost of plant, \$65,000. **Rates:** meter rate, 24c per 1,000 gal.

WHITBY, Ontario co., (2,700). In operation since 1904; owned by municipality. **Supply:** pumped from lake Ontario, 2 miles distant, to stand-pipe; steam power used, 45 h. p. **Reservoir:** stand-pipe 156,700 gal. **Distribution:** 5 miles of C. I. mains, 4 in. to 10 in.; 47 hydrants; 195 services, $\frac{1}{2}$ in. to 1 in. galvanized iron pipe. **Pressure:** ordinary, 45 lbs; fire, 200 lbs. **Consumption:** 130,000 gal. **Financial:** cost of supply plant, \$15,000; cost of distributing system, \$41,000; annual maintenance, \$2,600; annual revenue from consumers, \$2,450; from public uses, \$1,350. **Rates:** flat rate, \$5 for first tap. Officer in charge: Geo. W. P. Every, Superintendant.

WIARTON, Bruce co., (2,500). In operation since 1888; owned by municipality. **Supply:** pumped from Colpoys bay, one mile distant, to reservoir; electric power used, 35 h. p.; pumps in duplicate. **Reservoir:** one of 278,000 gal. capacity. **Distribution:** 6 $\frac{1}{2}$ miles of mains; 35 hydrants; 400 services. **Pressure:** ordinary, 84 lbs; fire, 110 lbs. **Consumption:** 244,000 gal. **Financial:** total cost of plant, \$50,000; annual maintenance, \$2,900; revenue, \$4,400. **Rates:** flat rate, \$5 per dwelling.

WINDSOR, Essex co., (16,142). In operation since 1872-73; owned by municipality. **Supply:** pumped from Detroit river, $\frac{1}{2}$ mile distant, directly into mains; steam power used, 150 h. p.; pumps are in duplicate, and, in emergency, water can be obtained from the Walkerville system. **Distribution:** 38 miles of C. I. mains, 4 in. to 16 in.; 312 hydrants; 3,896 services, lead pipe. **Pressure:** ordinary, 50 lbs; fire, 100 lbs. **Consumption:** 5,000,000 gal. **Financial:** total cost of plant, \$350,000; annual maintenance (including debentures), \$46,500; revenue from consumers, \$47,450; from public uses, \$7,500. **Rates:** meter rate, 10c. per 1,000 gal.; flat rate on assessment basis, \$3.40 and upward. Officer in charge: Joseph Hall, Chief Engineer. Also supplies Sandwich.

WINGHAM, Huron co., (2,400). In operation since 1879; owned by municipality. **Supply:** pumped from Maitland river, $\frac{1}{2}$ mile distant, to stand-pipe and mains; water-power used, maximum, 200 h. p., average, 75 h. p. **Reservoir:** stand-pipe of 129,000 gal. capacity. **Distribution:** 3½ miles of C. I. mains, 2 in. to 10 in.; 27 hydrants; 180 services, galvanized iron pipe. **Pressure:** ordinary, 76 lbs; fire, 120 lbs. **Consumption:** 60,000 gal. **Financial:** total cost of plant, \$41,000; annual maintenance, \$1,000; revenue, \$2,754. **Rates:** flat rate. Officer in charge: George Allen, Superintendent.

WOODSTOCK, Oxford co., (9,420). Fire protection system built in 1880; present system in operation since 1891; owned by municipality. **Supply:** pumped from springs, 4 miles distant, to reservoir and mains; electric power used, maximum, 175 h. p., average, 140 h. p.; steam auxiliary plant. **Reservoir:** one of 1,000,000 gal. capacity. **Distribution:** 27 miles of iron mains, $\frac{1}{2}$ in. to 12 in.; 165 hydrants; 2,200 services, galvanized iron pipe. **Pressure:** ordinary, 80 lbs; fire, 125 lbs. **Consumption:** 1,500,000 gal. **Financial:** cost of supply plant, \$81,063; cost of distribution system, \$134,853; annual maintenance, \$16,967; revenue from consumers, \$20,182; from public uses, \$6,734. **Rates:** flat rate, \$5 for first tap; bath-room, \$4.50; meter rate, 6½c. to 25c. per 1000 gal. Officer in charge: J. G. Archibald, Superintendent.



MANITOBA

BRANDON, (15,000). In operation since 1893; owned by municipality. **Supply:** by gravity from Assiniboine river 1,000 ft. distant, to wells, thence pumped through filters to mains; steam power used, pumps in duplicate. **Filters:** eight "New York" pressure filters. **Distribution:** 18 miles of C. I. mains, 4 in. to 16 in.; 115 hydrants; 1,600 services, $\frac{1}{2}$ in. to 4 in. lead and galvanized iron pipes. **Pressure:** ordinary, 85 lbs.; fire, 140 lbs. **Consumption:** 1,145,213 gal. **Financial:** total cost of plant, \$369,368; annual maintenance, \$20,844; revenue, \$65,573. **Rates:** meter rate, 6.4c to 32c per 1000 gal. Officer in charge: A. W. Shaw, Superintendent.

CARBERRY, (1,200). In operation since 1907; owned by municipality. **Supply:** pumped from wells to reservoir, thence into mains; steam power used; boilers in duplicate. **Reservoir:** one of 35,000 gal. capacity. **Distribution:** 1 $\frac{1}{2}$ mile of wooden mains, 4 in. to 8 in.; 25 hydrants. **Pressure:** fire, 100 lbs. **Financial:** cost of supply plant, \$2,500; cost of distribution system, \$13,500; annual maintenance, \$1,200. For fire protection only.

CARMAN, (1,800). In operation since 1909; owned by municipality. **Supply:** by gravity from Boyne river, 200 ft. distant, to reservoir, thence pumped to elevated tank; steam power used. **Reservoirs:** one of 20,000 gal.; elevated tank, 60,000 gal. **Distribution:** 2 $\frac{1}{2}$ miles of wire-wound wooden mains, 4 in to 10 in.; 22 hydrants; 46 services, galv. iron pipe. **Pressure:** ordinary, 50 lbs.; fire 50 to 130 lbs. **Consumption:** 24,000 gal. **Financial:** total cost of plant, including sewerage system, \$74,000; annual maintenance, \$595; revenue, \$708. **Rates:** flat rate, \$12 per dwelling. Water not used for drinking or cooking purposes. Officer in charge: F. S. McCoy.

GRANDVIEW, (900). In operation since 1904; owned by municipality. **Supply:** pumped from Valley river, 1,500 ft. distant, to tank or directly into mains; gasoline engine used, 6 h.p. **Filter:** charcoal and sand filter. **Reservoir:** one tank of 30,000 gal. capacity. **Distribution:** one mile of iron mains, 2 in. and 2 $\frac{1}{2}$ in.; 7 hydrants; 100 services, iron pipe. **Consumption:** 10,000 gal. **Financial:** total cost of plant, \$5,000; annual maintenance, \$1,100. **Rates:** flat rate on assessment basis. Officer in charge: Peter Hume.

PORTE LA PRAIRIE, (7,000). In operation since 1905; owned by municipality. **Supply:** pumped from Assiniboine river, 3 miles distant, through galleries to well, thence pumped directly into mains; steam and electric power used; maximum, 100 h.p., average, 75 h.p.; pumping apparatus in duplicate. **Filter:** sand filter. **Reservoirs:** two, of 500,000 and 250,000 gal. capacity, respectively. **Distribution:** 14½ miles of C. I. and wooden mains, 6 in. to 12 in.; 146 hydrants; 460 services, ½ in. to 2 in. lead pipe. **Pressure:** ordinary, 40 lbs.; fire, 125 lbs. **Consumption:** 225,000 gal. **Financial:** total cost of plant, \$425,000; annual maintenance, \$6,830; interest and sinking fund, \$27,795; revenue from consumers, \$8,000; from public uses, \$11,900. **Rates:** meter rate, 16c. to 40c. per 1000 gal. Officer in charge: R. Pride, Chief Engineer.

SAINTE BONIFACE, ((8,000). In operation since 1904; owned by municipality. **Supply:** pumped from wells to tank; steam power used, 60 h.p. **Reservoirs:** one elevated tank of 86,000 gal. capacity, and two other reservoirs of 500,000 gal. each. **Distribution:** 19 miles of C. I. mains, 4 in. to 12 in.; 102 hydrants; 1,010 services, ½ in. lead pipe. **Pressure:** ordinary, 50 to 60 lbs.; fire, 100 lbs. **Consumption:** 130,000 gal. **Financial:** total cost of plant, \$350,000; annual maintenance, \$17,372; revenue, \$20,878. **Rates:** meter rate, 37½c. to 45c. per 1,000 gal. Officer in charge: M. P. Blair, City Engineer.

SOURIS, (2,000). In operation since 1912; owned by municipality. **Supply:** from wells, 100 to 600 yards distant, to reservoir, thence pumped to compression tank; suction gas engines used; engines, pumps, and tanks in duplicate. **Reservoir:** one, 30 ft. diameter by 26 ft. deep. **Distribution:** 12 miles of C. I. mains, 4 in. to 8 in.; 76 hydrants; 110 services. **Financial:** cost of supply plant, \$30,500; cost of distribution system, \$83,000. **Rates:** meter rate, 40c. to 50c. per 1,000 gal. Officer in charge: P. C. Smith, Town Engineer.

WINNIPEG, (175,000). In operation since 1899; owned by municipality. **Supply:** pumped from artesian wells, 2 to 4 miles distant, directly into mains; steam and electric power used, average, 300 h.p.; each well has a separate pump. **Reservoirs:** two of 300,000 gal. and 6,000,000 gal. capacity, respectively. **Distribution:** 221 miles of C. I. mains, 4 in. to 20 in.; 1,693 hydrants; 26,607 services, ½ in. to 1 in., lead and 4 in. to 6 in. C. I. pipes. **Pressure:** ordinary, 50 lbs.; fire, 80 lbs. **Consumption:** 8,000,000 gal. **Financial:** cost of supply plant, \$1,250,000; cost of distribution system, \$2,250,000; annual maintenance (exclusive of interest which amounts to \$230,000), \$188,200; revenue, \$425,000. **Rates:** flat rate, \$6 and upward per dwelling, according to number of rooms.

HIGH PRESSURE SYSTEM: Winnipeg has also a high pressure system in the business portion of the city, which has been in operation since 1907. The water is pumped from the Red river, producer gas engines, consisting of 6 units of an aggregate capacity of 9,000 gal. per minute being used. The engines can also be supplied from the city gas mains. The distribution system consists of 8 miles of 8 in. to 20 in. mains, to which there are connected 86 hydrants. The pressure is 300 lbs. Officer in charge: H. N. Ruttan, City Engineer.



SASKATCHEWAN

ARCOLA, (1,200). In operation since 1907; owned by municipality. **Supply:** by gravity from springs, $3\frac{1}{2}$ miles distant; also pumped to stand-pipe with 10 h.p. gasoline engine. **Distribution:** 6 miles of wooden mains, 8 in. and 12 in.; 13 hydrants; 30 services, $\frac{1}{2}$ in. pipe. **Pressure:** 60 lbs. **Consumption:** 100,000 gal. **Financial:** cost of supply plant, \$10,000; cost of distribution system, \$70,000; annual maintenance, \$1,000; revenue, \$2,800. **Rates:** flat rate, \$15 per dwelling. Officer in charge: Geo. Fortuck.

CARLYLE, (600). In operation since 1911; owned by municipality. **Supply:** pumped from wells. **Reservoir:** one of 12,000 gal. capacity. **Distribution:** one mile of 6 in. main; 7 hydrants. **Pressure:** ordinary, 40 to 50 lbs.; fire, up to 80 lbs. **Consumption:** 7,000 gal. **Financial:** total cost of plant, \$13,000; annual revenue, \$1,100. **Rates:** flat rate, \$10 to \$15 per dwelling; bath, \$3.

ESTEVAN, (2,300). In operation since 1910; owned by municipality. **Supply:** pumped from well, in town, to stand-pipe; 50 h. p. gasoline engine used. **Reservoirs:** stand-pipe 100,000 gal. capacity, 80 ft. high; well 40,000 gal. **Distribution:** $2\frac{1}{2}$ miles of C. I. mains, 6 in. and 8 in.; 24 hydrants. **Pressure:** ordinary, 40 lbs.; fire, 80 to 120 lbs. For fire protection only. Officer in charge: L. A. Duncan, Secretary-treasurer.

FRANCIS, (400). In operation since 1909; owned by municipality. **Supply:** by gravity from spring, $2\frac{1}{4}$ miles distant. **Distribution:** $2\frac{1}{4}$ miles of wooden and iron mains, 6 in.; 7 hydrants. **Pressure:** 12 lbs. **Consumption:** 3,000 gal. **Financial:** cost of supply plant, \$4,000; annual maintenance, \$850; revenue, \$2,200. **Rates:** flat rate, \$6 per dwelling.

INDIAN HEAD, (2,000). In operation since 1906; owned by municipality. **Supply:** by gravity from springs, 9 miles distant. **Distribution:** 13 miles of wooden and C. I. mains, 4 in. to 12 in.; 43 hydrants; 188 services; $\frac{5}{8}$ in. to 1 in. lead pipe. **Pressure:** ordinary, 80 lbs; fire, 150 lbs. **Financial:** cost of supply plant, \$68,340; cost of distribution system, \$49,300; annual maintenance (exclusive of interest) \$2,000; annual revenue from consumers \$6,900; from public uses \$1,200. **Rates:** flat rate, \$12 to \$36 per dwelling; cattle \$3 per head.

MAPLE CREEK, (1,600). In operation since 1907; owned by municipality.

Supply: by gravity from springs, 8 miles distant. **Reservoir:** one of 200,000 gal. capacity. **Distribution:** 10 miles of wooden mains, 6 in. to 12 in.; 30 hydrants; 256 services, $\frac{1}{2}$ in. and $\frac{3}{4}$ in. galv. iron pipes. **Pressure:** ordinary, 60 lbs.; fire, up to 110 lbs. **Consumption:** 200,000 gal. **Financial:** total cost of plant, \$75,000; annual maintenance, \$1,000; revenue, \$7,000. **Rates:** flat rate, \$15 to \$25 per dwelling. Officer in charge: D. Paterson, Secretary-Treasurer.

MOOSE JAW, (20,000). In operation since 1905; owned by municipality.

Supply: by gravity from springs, 8 miles distant, to reservoir, thence pumped directly into mains; water is also pumped from wells to same reservoir; steam and electric power used, maximum, 150 h. p.; average, 23 h. p. **Reservoirs:** three of 95,000,000 gal. capacity at springs; two others of 291,500 gal. and 100,000 gal. capacity, respectively. **Filter:** crushed rock and charcoal filter used at springs. **Distribution:** 29 miles of C. I. and wooden mains, 4 in. to 12 in.; 175 hydrants; 1,447 services; $\frac{3}{4}$ in. to 2 in. lead and galv. iron pipe. **Pressure:** ordinary, 40 lbs.; fire, 140 lbs. **Consumption:** 300,000 gal. **Financial:** total cost of plant, \$500,000; annual maintenance, \$22,260; annual revenue, \$28,300. **Rates:** meter rate, 16c to 40c per 1000 gal. A new plant is being installed which will be supplied from wells 20 miles distant. Officer in charge: J. Antonisen, City Engineer.

MOOSOMIN, (1,500). In operation since 1907; owned by municipality.

Supply: pumped from well to stand-pipe; 50 h. p. gasoline engine used. **Reservoir:** stand-pipe, 100,000 gal. capacity, 80 ft. high. **Distribution:** 2 miles of iron mains, 6 in.; 16 hydrants; 9 services. **Pressure:** ordinary, 37 lbs.; fire, 125 lbs. **Financial:** total cost of plant, \$30,000. **Rates:** flat rate, \$12 and upward per dwelling. Officer in charge: G. S. Page, Secretary-Treasurer

NORTH BATTLEFORD, (2,000). In operation since 1910, owned by municipality. **Supply:** pumped from North Saskatchewan river, 1½ mile distant, to elevated tank; electric power and gasoline engine used, maximum 70 h. p., average, 35 h. p.; pumping apparatus in duplicate. **Reservoirs:** supply basin, 100,000 gal. capacity; tank, 156,000 gal. capacity. **Distribution:** 4 miles of C. I. mains, 4 in. to 10 in.; 42 hydrants; 100 services, $\frac{1}{2}$ in. to 2 in. pipe. **Pressure:** ordinary, 60 lbs.; fire, 150 lbs. **Consumption:** 60,000 gal. **Financial:** total cost of plant, \$84,000; annual maintenance, \$1,000; revenue, \$4,800. **Rates:** meter rate, 40c to 56c per 1,000 gal. Officer in charge: M. D. Cadwell, Superintendent.

PRINCE ALBERT, (10,000). In operation since 1907; owned by municipality. **Supply:** pumped from North Saskatchewan river, 200 ft. distant,

to sedimentation basin, thence to stand-pipe; steam power used, 50 h. p. **Filter:** 600,000 gal. pressure filter. **Reservoirs:** sedimentation basin, 1,000,000 gal. capacity; stand-pipe, 160,000 gal. capacity. **Distribution:** 15 miles of C. I. mains, 6 in. to 10 in.; 120 hydrants; 420 services, $\frac{5}{8}$ in. lead pipe. **Pressure:** ordinary, 80 lbs.; fire, 150 lbs. **Consumption:** 400,000 gal. **Financial:** cost of supply plant, \$69,000; cost of distribution system, \$312,000; annual maintenance, \$25,000; revenue, \$17,500. **Rates:** flat rate, \$16 to \$24 per dwelling; meter rate, 8c to 32c per 1,000 gal. Officer in charge: F. A. Creighton, City Engineer.

REGINA, (30,000). In operation since 1905; owned by municipality. **Supply:** by gravity from springs (and Boggy creek as a reserve), $8\frac{1}{2}$ miles distant, to reservoirs at pump house, thence pumped directly into mains; steam power used, average, 30 h. p.; pumps in duplicate. **Reservoirs:** one at creek of 100,000,000 gal. capacity; two basins, about half way to pump house, of 65,000 gal. and 1,000,000 gal. capacity, respectively; two reservoirs at pump house of 650,000 gal. total capacity; one of 5,000,000 gal. being constructed. **Distribution:** 39 miles of wooden and iron mains, 6 in. to 18 in.; 193 hydrants; 2,700 services, $\frac{3}{4}$ in. lead pipe. **Pressure:** ordinary, 40 lbs.; fire, 90 to 100 lbs. **Consumption:** 1,400,000 gal. **Financial:** total cost of plant, \$534,270; annual maintenance, \$20,000; revenue, \$45,828. **Rates:** meter rate, 6c to 25c per 1,000 gal.; flat rate, \$9 and upward per dwelling, according to number of rooms; bath-room, \$7.50. Officer in charge: L. A. Thornton, City Engineer.

SASKATOON, (18,096). In operation since 1907; owned by municipality. **Supply:** pumped from South Saskatchewan, river, $1\frac{1}{2}$ mile distant, directly into mains and to stand-pipes; steam power used, maximum, 87 h.p.; average, 25 h.p.; pumping apparatus in duplicate. **Filter:** gravity mechanical filter. **Reservoirs:** two stand-pipes, each of 157,000 gal. capacity and 80 ft. high. **Distribution:** $22\frac{1}{2}$ miles of C. I. mains, 4 in. to 12 in.; 257 hydrants; 1,170 services, galv. iron and lead pipe. **Pressure:** ordinary, 60 lbs.; fire, 125 lbs. **Consumption:** 1,250,000 gal. **Financial:** cost of supply plant, \$153,000; cost of distribution system, \$338,000; annual maintenance, \$52,017; revenue from consumers, \$42,762; from public uses, \$10,265. **Rates:** meter rate, 16c to 48c per 1,000 gal. Officer in charge: G. T. Clark, City Engineer.

TANTALLON; (100). In operation since 1908; owned by municipality. **Supply:** by gravity from spring, $\frac{3}{4}$ mile distant. **Distribution:** $\frac{3}{4}$ mile of wooden and iron mains, 3 in. and 4 in.; 12 services, $\frac{5}{8}$ in. to 1 in. galv.

iron pipe. **Pressure:** 62 lbs. **Financial:** total cost of plant, \$1,900; annual revenue, \$90. **Rates:** flat rate, \$7.00 per dwelling. Officer in charge: George Markland.

WEYBURN, (3,200). In operation since 1911; owned by municipality. **Supply:** pumped from well in gravel bed, $1\frac{1}{4}$ mile distant, to stand-pipe; electric power used, maximum, 50 h. p.; auxiliary gasoline engine pumping plant. **Reservoir:** stand-pipe, 160,000 gal. capacity, 80 ft. high. **Distribution:** 5 miles of C. I. mains, 4 in. to 8 in.; 55 hydrants; 120 services, galv. iron pipe. **Pressure:** ordinary, 60 lbs.; fire, 110 lbs. **Consumption:** 50,000 gal. **Financial:** cost of supply plan, 60,000; cost of distribution system, \$25,000; annual revenue, \$6,000. **Rates:** meter rate, 40c to \$1.20 per 1000 gal. Officer in charge: N. Murray.

YORKTON, (4,000). In operation since 1908; owned by municipality. **Supply:** pumped from wells directly into mains and to compressed air tanks; gasoline engines used, 32 h. p.; pumping apparatus in duplicate. **Reservoirs:** two compressed air tanks of 19,000 gal. capacity each. **Distribution:** $7\frac{1}{4}$ miles of C. I. mains, 4 in. to 8 in.; 58 hydrants; 290 services, galv. iron pipe. **Pressure:** ordinary, 40 to 60 lbs.; fire, 65 lbs. **Financial:** total cost of plant, \$60,000; annual maintenance, \$4,000; revenue, \$6,000. **Rates:** meter rate, 80c per 1000 gal. Officer in charge: H. Talbot-Crosbie, Town Engineer.



ALBERTA

BANFF, (600). In operation since 1908; owned by municipality. **Supply:** by gravity from Forty-mile creek, $2\frac{1}{2}$ miles distant. **Distribution:** $4\frac{1}{4}$ miles of iron mains, 10 in.; 32 hydrants; 150 services, $\frac{3}{4}$ in. pipe. **Pressure:** 125 lbs. **Financial:** total cost of plant, \$100,000; annual maintenance, \$6,000; revenue from consumers, \$2,100; from public uses, \$2,000. **Rates:** flat rate, 5c. per foot of frontage. Officer in charge: A. B. Macdonald, Superintendent, Rocky Mountains park.

CALGARY, (40,000). In operation since 1891; owned by municipality. **Supply:** by gravity from Elbow river, 12 miles distant; steam and electric auxiliary plant. **Filter:** coke filter. **Reservoir:** one of 20,000,000 gal. capacity. **Distribution:** 120 miles of wooden, steel and C. I. mains, 6 in. to 30 in.; 560 hydrants; 7,200 services, lead and iron pipes. **Pressure:** ordinary, 80 lbs.; fire, 120 lbs. **Consumption:** 7,000,000 gal. **Financial:** total cost of plant, \$1,917,000; annual maintenance, \$53,950; revenue, \$149,000. **Rates:** flat rate, \$5 and upward per dwelling; bathroom, \$2. Officer in charge: J. T. Child, City Engineer.

CARDSTON, (1,200). In operation since 1907; owned by municipality. **Supply:** pumped from Lee creek to reservoir; steam power used, 75 h.p.; boilers in duplicate. **Reservoir:** one of 62,500 gal. capacity. **Distribution:** 3 miles of wooden mains; 21 hydrants; 80 services, $\frac{1}{2}$ in. iron pipe. **Pressure:** fire, 125 lbs. **Financial:** total cost of plant, \$30,000; annual revenue from consumers, \$2,000; from public uses, \$168. **Rates:** flat rate. Officer in charge: Samuel Treasurer.

CLARESHOLM, (1,200). In operation since 1910; owned by municipality. **Supply:** pumped from Willow creek, 6 miles distant, to stand-pipe; electric power used, maximum, 60 h.p., average, 50 h.p. **Reservoir:** stand-pipe of 100,000 gal. capacity. **Filter:** water drawn from gravel bed, 150 ft. from river. **Distribution:** 10 miles of wooden and iron mains, 4 in. to 8 in.; 29 hydrants; 100 services, galvanized iron pipe. **Pressure:** ordinary, 40 lbs.; fire, 65 lbs. to 100 lbs. **Consumption:** 35,000 gal. **Financial:** cost of supply plant, \$56,000; cost of distribution system, \$17,000; revenue from consumers, \$3,500; from public uses, \$1,500. **Rates:** flat rate, \$12 to \$24 per dwelling; meter, 8c. per 1,000 gal.

COLEMAN, (2,000). In operation since 1906; owned by International Coal and Coke Co., Ltd. **Supply:** by gravity from Nez Perce creek; steam

pumping station, supplied from Oldman river for emergency. **Reservoir:** one, of 1,000,000 gal. capacity. **Distribution:** 4 miles of wooden mains, 2 in. to 10 in.; 6 hydrants; 180 services, $\frac{3}{4}$ in. galvanized iron pipe. **Pressure:** 135 lbs. **Consumption:** 300,000 gal. **Financial:** total cost of plant, \$35,000; annual maintenance, \$1,000; revenue from consumers, \$3,700. **Rates:** flat rate, \$18 per tap. Officer in charge: O. E. S. Whiteside, Manager.

EDMONTON, North Side, (25,000). In operation since 1901; owned by municipality. **Supply:** pumped from North Saskatchewan river, one mile distant, directly into mains; steam power used, maximum, 500 h.p., average, 275 h.p.; boilers and pumps in duplicate. **Filter:** mechanical filters. **Distribution:** 60 $\frac{1}{4}$ miles of C. I. and steel mains, 4 in. to 20 in.; 287 hydrants; 4,736 services, $\frac{3}{4}$ in. to 4 in., lead and galvanized iron pipes. **Pressure:** ordinary, 45 lbs. to 100 lbs.; fire, 85 lbs. to 125 lbs. **Consumption:** 3,000,000 gal. **Financial:** cost of supply plant, \$197,590; cost of distribution system, \$807,775; annual maintenance, \$136,112; revenue, \$117,769.

South Side, (6,000). In operation since 1906; owned by municipality. **Supply:** same as on north side. **Distribution:** 19 $\frac{1}{4}$ miles of wooden mains, 4 in. to 20 in.; 121 hydrants; 701 services, lead and galvanized iron pipes. **Pressure:** ordinary, 50 lbs.; fire, 85 lbs. **Consumption:** 500,000 gal. **Financial:** total cost of plant, \$219,352; annual maintenance, \$19,271; revenue, \$17,169. **Rates:** (north and south sides); flat rate, \$8 and upward per dwelling; bath-room, \$8; meter, 9.6c. to 40c. per 1000 gal. Officer in charge: A. McLean, Superintendent.

LETHBRIDGE, (13,000). In operation since 1904; owned by municipality. **Supply:** pumped from Belly river, one mile distant, to stand-pipes and directly into mains; steam and electric power used, maximum, 350 h.p., average, 200 h.p.; motors and pumps in duplicate. **Filter:** sand and gravel filter used. **Reservoirs:** two stand-pipes of 156,000 gal. and 470,000 gal. respectively. **Distribution:** 32 miles of wooden and iron mains, 4 to 18 in.; 168 hydrants; 1,800 services, galvanized iron pipe. **Pressure:** ordinary, 35 lbs.; fire, 100 lbs. **Consumption:** 1,500,000 gal. **Financial:** total cost of plant, \$350,000; annual maintenance, \$5,600; revenue, \$54,000. **Rates:** flat rate, dwelling, \$12 for first tap; bath-room, \$5; meter, 10c. to 40c. per 1,000 gal. Officer in charge: A. C. D. Blanchard, City Engineer.

MACLEOD, (2,500). In operation since 1907; owned by municipality. **Supply:** pumped from Oldman river, $\frac{1}{2}$ mile distant, to stand-pipe; steam power used, maximum, 75 h.p., average, 40 h.p.; pumping

apparatus is in duplicate. **Reservoir:** stand-pipe of 100,000 gal. capacity. **Distribution:** 10 miles of wooden and C. I. mains, 6 in. and 8 in.; 62 hydrants; 300 services, galvanized iron and lead pipes. **Pressure:** ordinary, 45 lbs.; fire, 100 lbs. **Consumption:** 600,000 gal. **Financial:** cost of supply plant, \$27,883; cost of distribution system, \$105,254; annual maintenance, \$1,000; revenue from consumers, \$9,000; from public uses, \$2,000. **Rates:** flat rate, dwelling, \$20 for first tap; bath-room, \$5; meter rate, 12½c. to 30c. per 1,000 gal. Officer in charge: G. H. Altham, Superintendent.

MEDICINE HAT, (6,600). In operation since 1900, owned by municipality. **Supply:** pumped from S. Saskatchewan river, through filters, directly into mains and stand-pipe; natural gas engines used, maximum, 200 h.p., average, 125 h.p.; steam and electric plant for emergency. **Reservoir:** stand-pipe, 35 ft. diameter, 75 ft. high. **Filter:** mechanical filters used. **Distribution:** 16½ miles of iron and wooden mains, 6 in. to 10 in.; 125 hydrants; 1,400 services, ¼ in. galvanized iron pipe. **Pressure:** ordinary, 35 lbs. to 80 lbs.; fire, 60 lbs. to 80 lbs. **Consumption:** 850,000 gal. **Financial:** total cost of plant, \$280,948; annual maintenance, \$14,273; annual revenue, \$35,000. **Rates:** all flat rate, dwelling, \$12 and upward; bath-room, \$6; meter rate, 16c. to 40c. per 1000 gal. Officer in charge: A. K. Grimmer, City Engineer.

PINCHER CREEK, (1,500). In operation since 1906; owned by Municipal Water and Light Co., Ltd. **Supply:** by gravity from Pincher Creek, 2 miles distant. **Filter:** gravel filter used. **Reservoir:** one, 30 ft. diameter, 12 ft. deep. **Distribution:** wooden mains; 24 hydrants; 160 services, ½ in. to 2 in. iron pipe. **Pressure:** 65 lbs. **Consumption:** 90,000 gal. **Financial:** total cost of plant, \$48,000; annual maintenance, \$1,200; revenue, \$4,000. **Rates:** flat rate, \$15 per dwelling. Officer in charge: F. W. Forster, Superintendent.

RAYMOND, (1,600). In operation since 1911; owned by municipality. **Supply:** by gravity from springs, 2 miles distant, and pumped to tank or mains; gas engine used, maximum, 11 h.p.; average, 5 h.p. **Distribution:** 8 miles of wooden mains, 4 in. to 10 in.; 4 hydrants; 110 services, galvanized iron and lead pipe. **Pressure:** 25 lbs. **Consumption:** 18,000 gal. **Financial:** cost of supply plant, \$2,000; cost of distribution system, \$45,000. **Rates:** meter rate. Officer in charge: R. Powell.

RED DEER, (3,000). In operation since 1906; owned by municipality. **Supply:** pumped from Red Deer river, 200 feet distant, directly into mains; steam power used, capacity of pumps, 1,000,000 gal. each;

pumping apparatus is in duplicate. **Filter:** cinder and gravel basins used. **Distribution:** 6½ miles of wooden and C. I. mains, 6 in. to 10 in.; 32 hydrants; 204 services, galvanized iron pipe. **Pressure:** ordinary, 35 lbs.; fire, 120 lbs. **Financial:** total cost of plant, \$85,000; annual maintenance, \$2,183; revenue, \$2,526. **Rates:** flat rate, \$6.50 per dwelling; meter rate also used. Officer in charge: A. T. Stephenson, Commissioner.

STETTLER, (1,750). In operation since 1911; owned by municipality. **Supply:** pumped from well to reservoir and tower; steam power used. **Reservoir:** one of 50,000 gal. capacity. **Distribution:** ⅔ mile of C. I. mains, 8 in. and 10 in.; 10 hydrants; 15 services, galvanized iron pipe. **Pressure:** 56 lbs. **Financial:** total cost of plant, \$37,000. **Rates:** flat and meter rates.

TABER, (2,000). In operation since 1910; owned by municipality. **Supply:** pumped from Belly river, 2 miles distant, to tank; steam power used. **Distribution:** 6 miles of C. I. mains, 6 in. to 10 in.; 32 hydrants; 150 services, ½ in. galvanized iron pipe. **Pressure:** ordinary, 40 lbs.; fire, 70 lbs. **Consumption:** 8,000 gal. **Financial:** total cost of plant, \$15,000. **Rates:** flat rate. Officer in charge: W. E. Porter.

WETASKIWIN, (3,500). In operation since 1910; owned by municipality. **Supply:** pumped from wells, 2,500 feet distant to elevated tank; gas engine used. **Reservoir:** one of 175,000 gal. capacity. **Distribution:** 5½ miles of C. I. mains, 6 in. to 10 in.; 48 hydrants; 50 services, lead and galvanized iron pipes. **Pressure:** ordinary, 70 lbs.; fire, 100 lbs. to 110 lbs. **Financial:** cost of supply plant, \$30,000; cost of distribution system, \$80,000. **Rates:** meter rate. Officer in charge: W. L. Crane, Superintendent.



BRITISH COLUMBIA

DUNCANS, (600). In operation since 1905; owned by The Couichan Water-Works Co., Ltd. **Supply:** by gravity from Skinner creek, 2½ miles distant, directly into mains. **Reservoir:** one of 750,000 gal. capacity. **Distribution:** 5 miles of wooden mains, 4 in. to 8 in.; 8 hydrants; 146 services, iron pipe. **Pressure:** 60 lbs. **Financial:** total cost of plant, \$14,659; annual maintenance, \$1,209; revenue from consumers, \$2,278; from public uses, \$290. **Rates:** flat rate. Officer in charge: Ernest A. Price, Managing Director.

ESQUIMALT, Owned by the Esquimalt Water-Works Co., Victoria. Supplies water to Esquimalt peninsula. **Supply:** by gravity from Goldstream (Loon and Jack lakes). **Reservoirs:** five, with a total capacity of 3,476,000,000 gal. **Distribution:** 10½ miles of 31 in. mains; 27 hydrants; 1,050 services, galvanized iron and lead pipe. **Pressure:** 120 lbs. **Consumption:** 400,000 gal. **Rates:** meter rate, 20c. and 30c. per 1,000 gal.

GRAND FORKS, (2,500). In operation since 1911; owned by municipality. **Supply:** pumped from Kettle river, 500 miles distant, directly into mains and to tank; electric power used, 80 h.p.; pumping plant in duplicate. **Filter:** gravel filter used. **Reservoir:** one tank of 90,000 gal. capacity. **Distribution:** 10 miles of steel and wooden mains, 4 in. to 8 in.; 48 hydrants; 500 services, galvanized iron. **Pressure:** 120 lbs. **Consumption:** 300,000 gal. **Financial:** cost of supply plant, \$70,000; annual maintenance, \$4,384; revenue from consumers, \$6,600; from public uses, \$200. **Rates:** flat rate of \$1 per tap. Officer in charge: J. Hay, Clerk.

GREENWOOD, (800). In operation since 1898; owned by municipality. **Supply:** by gravity from Lind, Twin and Providence creeks, 1 mile distant. **Reservoirs:** three reservoirs of 250,000 gal. capacity each. **Distribution:** 4½ miles of iron and wooden mains, 2 in. to 8 in.; 18 hydrants; 265 services, ½ in. to 2 in. galvanized iron pipe. **Pressure:** 130 lbs. **Financial:** total cost of plant, \$57,000; annual maintenance, \$627; revenue from consumers, \$4,860; from public uses, \$1,380. **Rates:** flat rate, of \$12 to \$18 per dwelling; bath-room, \$6; meter rate, 16c. to 35.2c. per 1000 gal.

KAMLOOPS, (4,000). In operation since 1895; owned by municipality. **Supply:** pumped from Thompson river, 900 ft. distant, to reservoir and directly into mains; steam power used, 150 h.p.; pumps and boilers

in duplicate. **Reservoir:** one of 6,000 gal. capacity. **Distribution:** 14 miles of C. I. and W. I. mains, 4 in. to 10 in.; 82 hydrants; 610 services, $\frac{3}{4}$ in. galv. iron pipe. **Pressure:** ordinary, 125 lbs.; fire, 145 lbs. **Consumption:** winter, 500,000 gal.; summer 1,250,000 gal. **Financial:** total cost of plant, \$110,000; annual maintenance, \$12,441; revenue from consumers \$15,224. **Rates:** flat rate. Officer in charge: G. L. Wain, Superintendent.

KASLO, (1,100). In operation since 1896; owned by municipality. **Supply:** by gravity from Kalso creek, 3 miles distant. **Reservoirs:** two of 10,000 gal. and 32,000 gal. capacity. **Distribution:** 2 miles of steel mains, 3 in. to 10 in.; 22 hydrants. **Pressure:** 72 lbs. **Consumption:** 28,000 gal. **Financial:** total cost of plant, \$32,000. **Rates:** flat rate. Officer in charge: R. A. Cockle, Water Commissioner.

KELOWNA, (2,000). In operation since 1908; owned by municipality. **Supply:** pumped from Okanagan lake, $\frac{1}{2}$ mile distant, directly into mains; steam power used, 15 to 40 h.p. **Distribution:** 7 miles of C. I. and wooden mains, 4 in. to 10 in.; 23 hydrants; 218 services, $\frac{3}{4}$ in. galv. iron pipe. **Pressure:** ordinary, 50 lbs.; fire, 125 lbs. **Financial:** total cost of plant, \$35,000; annual maintenance, \$3,000; revenue, \$4,200. **Rates:** flat and meter rates; meter 15c to 40c (less 25 per cent.) per 1,000 gal.; flat rate \$19.20 per dwelling. Officer in charge: G. H. Dunn, Town Clerk.

LILLOOET, (150). In operation since 1903; owned by S. A. Macfarlane. **Supply:** by gravity from a mountain stream, $\frac{3}{4}$ mile distant. **Reservoirs:** two; one created by damming stream, and a settling tank of 3,600 gal. capacity. **Distribution:** one mile of W. I. mains, 3 in. and $3\frac{1}{2}$ in.; 2 hydrants; 40 services, $\frac{1}{2}$ in. pipe. **Pressure:** 117 to 130 lbs. **Financial:** total cost of plant, \$3,000; annual revenue, \$480. **Rates:** flat rate, \$12 per dwelling. Officer in charge: S. A. Macfarlane.

LYTTON, (200). Owned by municipality. **Supply:** by gravity from Lytton creek, $1\frac{1}{2}$ mile distant. **Distribution:** $1\frac{1}{2}$ mile of wooden and iron mains, 5 in. and 6 in.

MICHEL, (4,000). In operation since 1910, owned by Michel Water Light and Power Co., Ltd. **Supply:** by gravity from Aqueduct creek, 1 mile distant. **Reservoir:** one of 60,000 gal. capacity. **Distribution:** $1\frac{1}{2}$ mile of wooden mains, 8 in. and 10 in.; 6 hydrants; 62 services, $\frac{1}{2}$ in. galv. iron pipe. **Pressure:** 96 lbs. **Consumption:** 24,000 gal. **Financial:** total cost of plant, \$15,000; annual maintenance, \$200; an-

nual revenue, \$1,800. **Rates:** flat rate, \$18 for first tap. Officer in charge: G. B. Stedman, Secretary-treasurer.

NELSON, (7,000). In operation since 1897; owned by municipality. **Supply:** by gravity from Cottonwood creek, 1½ mile distant. **Reservoir:** one of 1,000,000 gal. capacity. **Distribution:** 15½ miles of steel mains, 1½ in. to 14 in.; 61 hydrants; 1,473 services, iron pipe. **Pressure:** 100 lbs. **Financial:** total cost of plant, \$70,000; annual maintenance, \$2,000; revenue from consumers, \$23,000. **Rates:** flat rate, \$12 to \$18 per dwelling. Officer in charge: G. C. Mackay, Town engineer.

NEW WESTMINSTER, (15,000). Owned by municipality. **Supply:** by gravity from Coquitlam lake, 14 miles distant. **Distribution:** 14 miles of steel mains, 14 in. and 25 in.; 150 hydrants; 3,000 services, galv. iron pipe. **Pressure:** ordinary, 90 lbs.; fire, 174 lbs. **Financial:** annual cost of maintenance, \$16,000; net revenue, \$68,000. **Rates:** flat rate, \$12 to \$22 per dwelling; meter, 16c to 40c per 1,000 gal.; all subject to discounts of 20 per cent. to 30 per cent. Officer in charge: J. W. B. Blackman, City and Water-works Engineer.

PENTICTON. Proposed municipal installation. **Supply:** by gravity from Penticton and Ellis creeks. **Distribution:** 16 miles of C. I. mains, 4 in. to 10 in.; 52 hydrants; 179 services. **Financial:** estimated cost of plant, \$95,605. Officer in charge: F. H. Latimer, Town Engineer.

PRINCE RUPERT, (4,000). In operation since 1911; owned by municipality. **Supply:** partly from a mountain reservoir, and partly pumped from a reservoir in city; steam power used. City will shortly be supplied from lake Woodworth, 7 miles distant. **Reservoirs:** mountain reservoir, 500,000 gal. capacity; city reservoir, 8,000,000 gal. capacity. **Distribution:** 11½ miles of wooden and galv. iron mains, 2 in. to 12 in.; 31 hydrants; 672 services, galv. iron pipe. **Pressure:** 150 lbs. **Consumption:** 250,000 gal. **Financial:** annual revenue, \$10,000. **Rates:** flat and meter rates; flat rate, \$6 and upward per dwelling; bath-room, \$6; meter rate, up to 64c per 1000 gal. Officer in charge: W. M. Davis, City Engineer.

REVELSTOKE, (4,000). In operation since 1896; owned by municipality. **Supply:** by gravity from springs, 5½ miles distant. **Reservoirs:** two of 75,000 gal. capacity each. **Distribution:** 5 miles of wooden and iron mains, 4 in. to 12 in.; 42 hydrants; 526 services, ¼ in. galv. iron pipe. **Pressure:** 108 lbs. **Consumption:** 450,000 gal. **Financial:** cost of supply plant, \$40,000; cost of distribution system, \$80,000; annual main-

tenance, \$2,000; revenue, \$17,137. **Rates:** flat rate, \$18 per dwelling; bath-room, \$3. Officer in charge: J. B. Scott, Superintendent.

ROSSLAND, (4,000). In operation since 1890; owned by municipality. **Supply:** by gravity from springs, 7 miles distant. **Reservoirs:** three; one of 3,000,000 gal. and two of 200,000 gal. capacity each. **Distribution:** 9 miles of steel, C. I., and wooden mains, 4 in. to 14 in.; 36 hydrants; 800 services, $\frac{1}{2}$ in. to 1 in. galvanized iron pipe. **Pressure:** 80 to 215 lbs. **Financial:** total cost of plant, \$66,922; annual maintenance, \$3,334; revenue, \$14,900. **Rates:** flat rate, \$24 per dwelling; bath-room, \$12; meter rate, 45c. to 75c. per 1,000 gal. Officer in charge: J. A. McLeod, Superintendent.

SANDON, (400). In operation since 1896; owned by Sandon Water-Works and Light Co. **Supply:** by gravity from mountain streams, 1 mile distant. **Reservoirs:** three, 30,000 gal., 40,000 gal., and 90,000 gal. capacity. **Distribution:** 1½ mile of steel mains, 4 in. to 14 in.; 12 hydrants; 50 services. **Pressure:** 138 to 178 lbs. **Consumption:** 300,000 gal. **Financial:** cost of supply plant, \$30,000; cost of distribution system, \$20,000; annual maintenance, \$500; revenue from consumers, \$1,200; from public uses, \$600. **Rates:** flat rate, \$18 per dwelling. Officer in charge: J. M. Harris.

TRAIL, (1,700). Owned by municipality. **Supply:** by gravity from springs and creeks. **Reservoir:** one of 100,000 gal. capacity. **Distribution:** 4 miles of wooden and iron mains, 2 in. to 6 in.; 15 hydrants; 220 services, $\frac{1}{2}$ in. galvanized iron pipe. **Pressure:** 103 lbs. **Financial:** total cost of plant, \$15,000; annual maintenance, \$800; revenue, \$5,417. **Rates:** flat rate, \$18 per dwelling; \$12 for bath-room. Officer in charge: B. Tattrie.

VANCOUVER, (125,000).* In operation since 1889; owned by municipality. **Supply:** by gravity from Capilano river and Seymour creek, both 10 miles distant. **Reservoirs:** two, 10,000,000 gal. and 25,000,000 gal. capacity. **Distribution:** 240 miles of wooden, C. I., and steel mains, 4 in. to 36 in.; 1,100 hydrants; 21,200 services, lead and galvanized iron pipes. **Pressure:** ordinary, 100 lbs.; fire, 100 to 190 lbs. **Consumption:** 17,000,000 gal. **Financial:** total cost of plant, \$3,000,000; annual maintenance, \$45,000; revenue from consumers, \$400,000. **Rates:** flat rate, \$12 per dwelling; meter, 11.2c. to 25.6c. per 1000 gal. Officer in charge: F. L. Fellows, Supervising City Engineer.

* This figure includes a population of 25,000 in adjacent municipalities also served from this system.

VERNON, (3,000). In operation since 1899; owned by municipality. **Supply:** by gravity from B.X. creek. **Reservoirs:** three, 16,000,000 gal., 5,000,000 gal., and 500,000 gal. capacity. **Distribution:** 10 miles of C. I., steel, and wooden mains, 4 in. to 12 in.; 40 hydrants; 550 services, $\frac{3}{4}$ in. galvanized iron pipe. **Pressure:** 125 lbs. **Financial:** total cost of plant, \$161,741; annual maintenance, \$5,000; interest, \$7,915; revenue from consumers, \$9,366. **Rates:** flat rate, \$12 to \$15 per dwelling; bath-room, \$3. Officer in charge: G. T. Fox, Town Engineer.

VICTORIA, (50,000). In operation since 1874; owned by municipality. **Supply:** by gravity from Elk and Beaver lakes, 5 miles distant, and pumped to reservoir; pumps in duplicate. **Reservoirs:** one of 16,000,000 gal. capacity, and one stand-pipe of 200,000 gal. **Filter:** sand filter. **Distribution:** 135 miles of C. I. and steel mains; 400 hydrants; 7,186 services, lead pipe. **Pressure:** 40 lbs. to 80 lbs. **Consumption:** 4,000,000 gal. **Financial:** total cost of plant, \$1,765,447; annual maintenance, \$73,750; revenue from consumers, \$173,546; from public uses, \$19,102. **Rates:** all meter rate, 12½c. to 20c. per 1,000 gal. New system under construction at an estimated cost of \$2,000,000. Water to be supplied from Sooke lake. Officer in charge: C. H. Rust, City Engineer.

TABLE I

NUMBER OF WATER-WORKS PLANTS IN EACH PROVINCE, CLASSIFIED ACCORDING TO SOURCE OF SUPPLY,
MODE OF SUPPLY, POWER USED, ETC.

Province	No. of Plants Supplied From:			Mode of Supply		Kind of Power Used			Ownership	Rates on Which Charges Are Made			
	Springs or Wells	Lake	River	No. of Plants Using Filters	Pumped	Gravity	Water-Power	Steam	Electricity	Gas	Gasoline	Flat Meter	Both F. and M.
Nova Scotia . . .	13	12	4	1	19	10	1	9	—	—	—	25	4
New Brunswick . . .	13	1	2	1	7	9	—	6	1	2	—	14	2
P.E. Island	3	—	—	—	1	2	—	2	—	—	2	2	—
Quebec	42	11	41	15	48	46	8	24	11	1	2	57	37
Ontario	69	28	47	19	18	126	21	66	24	7	6	125	19
Manitoba	4	—	—	4	2	—	8	—	6	1	1	8	—
Saskatchewan . . .	12	—	—	3	4	11	—	4	2	—	4	15	—
Alberta	7	—	—	9	7	4	12	—	8	1	3	14	2
British Columbia .	14	4	3	—	2	17	4	—	3	1	—	16	5
Canada	177	56	113	50	118	228	30	128	40	14	13	276	70
												167	18
												85	

TABLE II

NUMBER OF WATER-WORKS PLANTS IN CANADA AT THE BEGINNING OF EACH FIVE YEAR PERIOD, 1850-1911

Province	1850	1855	1860	1865	1870	1875	1880	1885	1890	1895	1900	1905	1911
Nova Scotia.....	1	1	1	1	2	3	5	11	20	24	29	29	
New Brunswick.....	1	1	1	1	2	4	6	7	9	11	11	16	
P.E. Island.....	—	—	—	—	—	—	—	1	1	1	2	3	
Quebec.....	—	—	3	4	5	8	17	22	30	44	62	77	96
Ontario.....	—	—	2	3	5	5	10	20	28	59	85	100	119
Manitoba.....	—	—	—	—	—	—	—	—	—	2	3	6	8
Saskatchewan.....	—	—	—	—	—	—	—	—	—	—	—	2	15
Alberta.....	—	—	—	—	—	—	—	—	—	1	2	4	16
British Columbia.....	—	—	—	—	—	—	1	1	2	5	6	13	16
Canada.....	4	5	10	11	13	24	43	61	112	166	214	266	348

COMMISSION OF CONSERVATION

PLATE V

CURVE SHOWING INCREASE IN NUMBER
OF
WATER-WORKS PLANTS
IN
CANADA
Since 1850

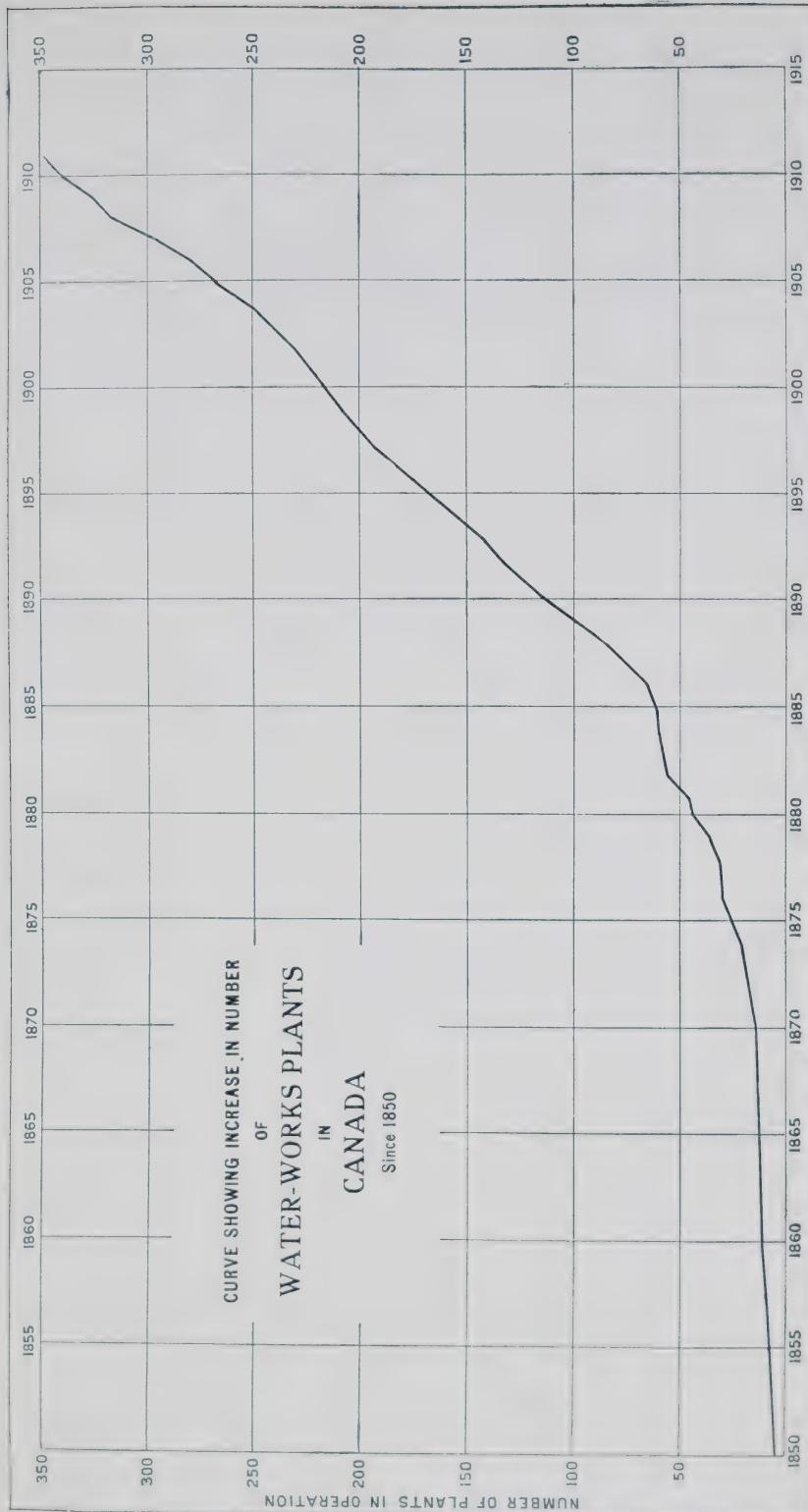


TABLE III
RATES AND CONSUMPTION FOR CITIES AND TOWNS WITH A POPULATION
OF 2,000 AND OVER

City or Town	Popula- tion Served	Daily per Capita Con- sump- tion in gal.	RATES		
			Meter	Flat (per year)	
			Per 1,000 gal. (Cents)	Per Dwelling (Dollars)	Extra per Bath- room* (Dollars)
Nova Scotia:					
Amherst.....	10,320	145	.... 8c.....	\$5 and upward	\$4
Antigonish.....	2,000	—	.....	5	6
Dartmouth.....	5,058	—	.... 8 to 15..	Assess. basis†, 4 and upward	
Glace Bay.....	17,000	89	.....	6 to 13	
Halifax.....	46,000	217	.... 5 to 15..	Assess. basis, 26c. per \$100	
Kentville.....	2,300	109	.....	5	10
Liverpool.....	2,100	—	.....	5	3
Lunenburg.....	3,000	—	.....	8 for first tap	5
New Glasgow.....	7,500	233	.... 3 to 30..	5 and upward	
Parrsboro.....	2,500	90	.....	5 for first tap	4
Pictou.....	3,200	60	.....	6 for first tap	6
Springhill.....	5,700	70	.....	6 per tap	
Stellarton.....	4,000	112	.... 6 to 8 ..	5 and upward	2
Sydney.....	18,000	117	.... 8 to 20..	5 for first tap	6.50
Sydney Mines.....	8,000	200	.....	6 per tap	5.50
Truro.....	6,100	246	.... 5 to 8..	6 per tap	4
Westville.....	4,400	41	.... 16 to 50..	6.50	
Windsor.....	3,000	116	.....	4 and upward	3
Yarmouth.....	6,600	127	.... 20.....	7.50 to 20	
Pr. Edward Is.:					
Charlottetown . . .	12,500	59	.... 30.....	6 per family	8
Summerside.....	3,000	20	.... 30.....	6	8
New Brunswick:					
Campbellton.....	5,000	45	.....	8 for first tap	5
Chatham.....	5,000	80	.....	5 for first tap	4
Fredericton.....	7,208	74	.... 10 to 25 ..	5 for first tap	8
Moncton.....	13,000	154	.... 10.....	10 to 17	
Newcastle.....	3,500	29	.....	8 for first tap	14
St. John.....	48,000	208	.... 10.....	3	7
St. Stephen.....	3,000	158	.....	7	10
Woodstock.....	3,856	83	.... 25.....	6 and upward	6.50

*Includes bath and water-closet.

†"Assess. basis" means that the flat rate is based on assessment.

TABLE III.—*Continued*

City or Town	Popula- tion Served	Daily per Capita Con- sump- tion in gal.	RATES		
			Meter	Flat (per year)	
			Per 1,000 gal. (Cents)	Per Dwelling (Dollars)	Extra per Bath- room* (Dollars)
Quebec:					
Aylmer.....	3,205	75	....30.....	\$6 to 26	\$6
Beauharnois.....	2,000	75	.....	Based on no. of taps	
Buckingham.....	4,500	222	.....	Asses. basis	
Cap St. Ignace.....	4,000	—	.....	Asses. basis	
Chicoutimi.....	5,500	—	.....	8	
Coaticook.....	3,000	67	.....	6 to 15	
Drummondville.....	2,500	—	.....	7.50	
Farnham.....	4,000	200	.....	6 to 8	
Fraserville.....	8,000	100	....7½ to 10...	7 to 20	
Granby.....	5,000	—	....15 to 18...	6 to 10	
Grand' Mère.....	5,500	—	.....	8 per tap	
Hull.....	16,600	211	....15	Assess. basis, $\frac{1}{2}$ of 1% and upward	
Iberville.....	2,000	50	.....	Assess. basis	
Joliette.....	6,700	149	.....	From 5 up	3
Lachine.....	10,000	250	....5 to 15...	Based on rental	
Lachute.....	2,500	—	.....	Assess. basis	
Laprairie.....	2,000	—	....17	6.50 and upward	3
Lauzon.....	3,800	16	.....	7	
Levis.....	7,600	92	.....	Based on rental	
Longueuil.....	2,900	155	.....	Based on rental	
Louiseville.....	2,000	50	.....	Assess. basis, 3 and upward	
Magog.....	3,600	—	....15 to 30...	7 and 8	3
Megantic.....	2,500	—	.....	6 per tap	5
Montmagny.....	2,700	37	.....	Assess. basis	
Montreal†.....	350,000	122	....18½...	Based on rental	
Montreal‡.....	230,000	109	.....	.....
Nicolet.....	2,900	95	.....	Assess. basis	
Pointe-au-Pic.....	2,500	—	.....	6 and upwards	
Quebec.....	75,000	134	.....	Based on rental	2
Limoilou.....	6,000	67	.....	6	
Richmond.....	2,175	—	.....	14	
Rimouski.....	3,000	100	.....	6	4
Rock Island.....	4,200	29	.....	6 up	7.50
Ste. Agathe des Monts.....	2,020	—	.....	Assess. basis	
Ste.Anne de Beaupré	2,000	50	.....	5.50	3.50

*Includes bath and water-closet.

†This includes only the Montreal municipal system.

‡This includes only the Montreal Water and Power Co's system.

TABLE III.—*Continued*

City or Town	Popu- lation Served	Daily per Capita Con- sump- tion in gal.	RATES		
			Meter	Flat (per year)	
			Per 1,000 gal. (Cents)	Per Dwelling (Dollars)	Extra per Bath- room* (Dollars)
Quebec (Con.):					
St. Eustache.....	2,100	20	.....	\$6 and upward	
St. Hyacinthe.....	11,057	114	.....	6 and upward on assess. basis	
St. Jérôme.....	4,500	—	.....	Assess. basis	
St. John.....	6,400	—	20 to 30 ..	6 and upward	
St. Joseph de Sorel..	2,200	55	.....	6 per tap	\$4
St. Lambert.....	2,659	90	15 to 27 ..	8.50 and upward	
St. Laurent.....	2,300	52	.....	Based on rental	
Shawinigan Falls....	4,300	174	3 to 75 ..	6	
Sherbrooke.....	16,000	113	.....	5 to 9	5
Sorel.....	10,000	—	19 ..	6 and upward	
Terrebonne.....	2,000	—	.....	8 to 10	
Thetford Mines . .	7,000	—	.....	8	
Three Rivers.....	14,000	107	.....	Assess. basis	
Valleyfield.....	10,000	120	.....	Assess. basis	
Verdun.....	12,000	50	.....	Based on rental	
Windsor Mills.....	2,300	54	.....	6 for kitchen tap	\$5
Ontario :					
Alexandria.....	2,400	94	17 to 30 ..	6	3
Amherstburg . .	2,547	196	.....	Flat rate	
Arnprior.....	4,200	119	.....	4 and upward	5
Aylmer†.....	2,500	60	5 to 36 ..		
Barrie.....	7,000	28	17 to 26 ..	4 for first tap	4.50
Belleville.....	11,000	100	10 to 30 ..	5 and upward	7
Berlin.....	15,338	60	6 to 18 ..	4 for tap	
Bracebridge.....	3,000	21	.....	6 and upward	4
Brampton.....	3,200	86	20 to 33 ..	12	
Brantford.....	25,000	100	8 to 20.8 ..	1.50 to 5	6.25
Brockville.....	9,300	301	.....	3.68 and upward	3.68
Campbellford.....	3,000	—	.....	5	
Chatham†.....	10,300	83	17½ ..		
Clinton.....	2,500	20	24 ..	5.50	
Cobalt.....	6,000	73	.....	15 and upward	
Cobourg.....	5,000	120	10 to 25 ..	5	6.50
Collingwood.....	7,600	78	12 ..	3.50	2
Cornwall.....	6,300	174	25 ..	6 for first tap	6.50
Deseronto.....	3,000	20	.....	5 per tap	

*Includes bath and water-closet.

†Water supplied on the *meter rate* only.

TABLE III.—*Continued*

City or Town	Popula- tion Served	Daily per Capita Con- sump- tion in gal.	RATES		
			Meter	Flat (per year)	
			Per 1,000 gal. (Cents)	Per Dwelling (Dollars)	Extra per Bath- room* (Dollars)
Ontario (Con.):					
Dundas.....	4,297	—	10 to 25....	\$6 to 8	
Dunville.....	3,000	—		6.25 for first tap	\$3.12
Fort William	19,000	184		8 to 14	6 to 10
Galt.....	9,800	84	11.2 to 28.8	3.75 and upward	
Gananoque†.....	3,800	44	32 to 40....		
Goderich.....	5,000	100		5	6
Gravenhurst.....	2,000	30		6	
Guelph.....	15,000	93	8 to 20....	Based on no. of rooms	4.20
Haileybury.....	5,000	38		6 and upward	5
Hamilton.....	85,000	123	7½ and 10....	4 and upward	2
Hanover.....	2,523	—		3	5
Hawkesbury.....	4,294	75		6 and upward	5
Huntsville.....	2,307	—		6.50 per tap	
Ingersoll.....	4,600	163	10 to 25....	5 and upward	6.50
Kenora.....	6,500	123		Based on size of dwell- ing	2
Kincardine.....	2,775	45	10.....	5 to 6	6.50
Kingston.....	19,500	121	9.6 to 48....	Assess. basis	3.77
Leamington.....	2,800	63		5	2
Lindsay.....	8,000	59	9.6 to 40....	6	6.50
Listowel.....	2,600	25	10 to 30....	5 for first tap	5
London.....	46,300	84	12.8 to 24....	5 and upward	7.50
Meaford.....	3,000	67		Flat rate	
Midland.....	4,500	—		6 for first tap	6
Mitchell.....	2,000	—		5	
Mount Forest.....	2,200	45		5	
Napanee.....	3,300	90	11½ to 57½	5.75 and upward	9.20
New Liskeard.....	4,000	37		6 and upward	8
Newmarket.....	3,159	31	20.....	6 for first tap	
Niagara Falls.....	10,000	224	6 to 12....	4	4
North Bay.....	8,534	83	6 to 8....	7 and upward	
North Toronto.....	5,500	32		6 and upward	.75 per inmate
Oakville.....	2,400	15		3 for first tap	8
Orgeville.....	2,500	—		5 and upward	6
Orillia.....	7,000	37		6	3.60
Oshawa.....	7,300	42	16.....	6 per tap	
Ottawa.....	90,230	175	6 to 8....	Assess. basis	

*Includes bath and water-closet.

†Water supplied on the *meter rate* only.

TABLE III.—*Continued*

City or Town	Popu- lation Served	Daily per Capita Con- sump- tion in gal.	RATES		
			Meter	Flat (per year)	
			Per 1,000 gal. (Cents)	Per Dwelling (Dollars)	Extra per Bath- room* (Dollars)
Ontario (Con.):					
Owen Sound.....	12,090	50	.....13.....	\$3.33 per family	\$3.33
Palmerston.....	2,000	65	.....	5 for first tap	5
Paris.....	4,000	44	.....	Flat rate	
Parry Sound.....	4,000	44	....4½ to 7....	3.50 up	
Pembroke.....	6,000	83	....10 to 30....	6	6
Penetanguishene.....	3,500	93	....15 to 50....	5 and upward	1 and upward
Perth.....	3,300	152	.....8.....	Assess. basis	
Peterborough.....	19,300	129	....13½ to 40....	Based on no. of rooms	5
Petrolia.....	4,000	147	Also meter rate	6	6
Picton.....	4,000	89	.12.8 to 19.2..	9	
Port Arthur.....	16,000	113	...11.2 to 16...	9 and up	
Port Hope.....	5,000	28	...10 to 25...	5 and 6 per tap	
Prescott.....	3,000	45	.9.6 to 35.2 ..	5.40 per tap	
Preston.....	3,300	45	....6 to 30....	6	7
Rainy River.....	2,000	—	....8 to 45....	9 and upward	9
Renfrew.....	3,700	138	.....	Based on no. of rooms	5
St. Catharines.....	13,500	204	.4.8 to 19.2..	3.50 to 6	5
St. Thomas.....	15,453	—	....8 to 16....	3.50 and upward	3.50
Sandwich.....	2,106	—	....21.....	5	3
Sarnia.....	9,810	347	.....	3 and upward	4
Sault Ste Marie.....	11,000	273	....8 to 24....	5 and upward	4
Seaforth.....	2,145	92	.....	5 to 30	
Simcoe.....	3,800	23	....8 to 24....	6 and upward	
Smiths Falls.....	6,500	77	....5.....	5 and upward	5.50
Steelton.....	3,954	29	.....	8 and up	
Stratford.....	14,779	67	.9.6 to 67...	5 to 12	7.50
Strathroy.....	3,100	80	....5.....	1 per tap	6.50
Sudbury.....	4,000	150	....6 to 8....	10.66 and upward	5.32
Thorold.....	2,300	33	.4.8 to 19.2..	4 to 6	5
Tillsonburg.....	3,000	42	Both flat and meter rates		
Toronto.....	425,000	99	....6½ to 15....	Based on no. of rooms	2.50
Trenton.....	5,000	50	....6.4 to 16....	1 to 5	
Walkerton.....	3,075	—	.....	Based on no. of rooms	5
Walkerville.....	5,000	39	....6 to 8....	4.80	1.60
Waterloo.....	4,800	93	....5½ to 22½...	3.75 for first tap	6
Welland.....	4,500	173	.....	Based on no. of rooms	3
Whitby.....	2,700	48	.....	5 for first tap	
Wiarton.....	2,500	97	.....	5	

*Includes bath and water-closet.

TABLE III.—*Continued*

City or Town	Popula- tion Served	Daily per Capita Con- sump- tion in gal.	RATES		
			Meter	Flat (per year)	
			Per 1,000 gal. (Cents)	Per Dwelling (Dollars)	Extra per Bath- room* (Dollars)
Ontario (Con.):					
Windsor.....	16,142	310	.....10.....	Assess. basis	
Wingham.....	2,400	25	.....	Flat rate	
Woodstock.....	9,420	159	....6½ to 25....	\$5	\$4.50
Manitoba :					
Brandon†.....	15,000	76	...6.4 to 32...		
Portage la Prairie†.	7,000	32	...16 to 40...		
Saint Boniface†....	8,000	16	...37½ to 45...		
Souris.....	2,000	—	...40 to 50...		
Winnipeg.....	175,000	46	.....	Based on no. of rooms 6 and upward	
Saskatchewan :					
Indian Head.....	2,000	—	.....	12 to 36	
Moose Jaw†.....	20,000	15	...16 to 40...		
North Battleford†..	2,000	30	...40 to 56...		
Prince Albert.....	10,000	40	...8 to 32...	16 to 24	
Regina.....	30,000	45	...6 to 25...	Based on no. of rooms	7.50
Saskatoon†.....	18,096	69	...16 to 48...		
Weyburn†.....	3,200	16	...40 to 120...		
Yorkton†.....	4,000	—	...80.....		
Alberta :					
Calgary.....	40,000	175	.....	5 and upward	2
Coleman.....	2,000	150	.....	18 per tap	
Edmonton, north ..	25,000	120	...9.6 to 40...	8 and upward	8
Edmonton, south ..	6,000	83	...9.6 to 40...	8 and upward	8
Lethbridge.....	13,000	115	...10 to 40...	12 for first tap	5
Macleod.....	2,500	240	...12½ to 30...	20 for first tap	5
Medicine Hat.....	6,600	129	...16 to 40...	12 and upward	6
Red Deer.....	3,000	—	Meter rate also used	6.50	
Taber.....	2,000	—	.....	Flat rate	
Wetaskiwin†.....	3,500	—	Meter rate used		
British Columbia :					
Grand Forks.....	2,500	120	.....	1 per tap	
Kamloops.....	4,000	219	.....	Flat rate	
Kelowna.....	2,000	—	...11 to 30....	19.20	

*Includes bath and water-closet.

†Water supplied on the *meter rate* only.

TABLE III.—*Continued*

City or Town	Popula- tion Served	Daily per Capita Con- sump- tion in gal.	RATES		
			Meter	Flat (per year)	
			Per 1,000 gal. (Cents)	Per Dwelling (Dollars)	Extra per Bath- room* (Dollars)
British Columbia <i>(Con.):</i>					
Michel.....	4,000	6	.....	\$18 for first tap	
Nelson.....	7,000	—	.....	12 to 18	
New Westminster..	15,000	—	16 to 40....	12 to 22†	
Prince Rupert	4,000	63	Up to 64....	6 and upward	\$6
Revelstoke.....	4,000	112	.....	18	3
Rossland.....	4,000	—	45 to 75....	24	12
Vancouver.....	125,000	136	.11.2 to 25.6..	12	
Vernon.....	3,000	—	.....	12 to 15	3
Victoria‡.....	50,000	80	.12½ to 20....		

*Includes bath and water-closet.

†Subject to discounts of 20% to 30%.

‡Water supplied on *meter rate* only.

TABLE IV
SEWAGE DISPOSAL IN CANADA

TABULATED FOR EASY REFERENCE FROM DATA COMPILED BY THE COMMITTEE ON "SEWAGE DISPOSAL" OF THE CANADIAN SOCIETY OF CIVIL ENGINEERS, 1911 AND 1912.

City or Town	Kind of Sewerage System*	Where discharged	Sewage Treated or Not	Remarks
Nova Scotia :				
Amherst.....	Combined	La Planche riv.	Not treated	
Dartmouth.....	"	Halifax har.	"	
Digby.....	Separate	Annapolis basin	"	
Glace Bay.....	Combined	Atlantic	"	
Halifax.....	"	Halifax har.	"	
Kentville.....	"	Cornwallis riv.	"	
Liverpool.....	Separate	Mersey riv.	"	
Middleton.....	Combined	Annapolis riv.	"	
St. Stephen.....	"	St. Croix riv.	"	
Stellarton.....	Separate	East riv.	"	
Sydney.....	Sep. and comb.	Sydney har.	"	
Truro.....	Separate	Salmon riv.	"	
Windsor.....	Combined	Avon riv.	"	
Wolfville.....	"	Creek	"	
Pr. Edward Is. :				
Summerside.....	Separate	Bedeque bay	Not treated	
New Brunswick :				
Campbellton.....	Separate	Chaleur bay	"	
Chatham.....	"	Miramichi riv.	"	
Fredericton.....	"	St. John riv.	"	
Moncton.....	Combined	Petitcodiac riv.	"	
Newcastle.....	"	Miramichi riv.	"	
St. Andrews.....	"	Harbour.	"	
St. Johns.....	"	Bay of Fundy	"	
Quebec :				
Asbestos.....	Separate	Small stream	Not treated	
Chicoutimi.....	Combined	Saguenay riv.	"	
Coaticook.....	"	Coaticook riv.	"	
Cookshire.....	"	Eaton riv.	"	
Drummondville....	Separate	St. Francis riv.	"	

* The sewerage systems are classified into two kinds, "combined" where the sewers carry both domestic sewage, street drainage and storm water in the same pipe, and "separate" where they carry domestic sewage only.

TABLE IV.—*Continued*

City or Town	Kind of Sewerage System	Where discharged	Sewage Treated or Not	Remarks
Quebec (Con.):				
Farnham.....	Combined	Yamaska riv.	Not treated	
Fraser ville.....	Comb. and sep.	River du Loup and St. Lawrence riv.	"	
Granby.....	Combined	Yamaska riv.	"	
Huntingdon.....	Separate	Châteauguay riv.	"	
Iberville.....	Combined	Richelieu riv.	"	
Joliette.....	"	L'Assomption riv.	"	
Lachine.....	"	Little St. Pierre riv.	"	
Lake Megantic.....	"	Chaudière riv.	"	
Lauzon.....	Separate	St. Lawrence riv.	"	
Lennoxville.....	Combined	St. Francis and Massawippi rive.	"	
Levis.....	Separate	St. Lawrence riv.	"	
Magog.....	Combined	Magog riv.	"	
Maison neuve.....	"	St. Lawrence riv.	"	
Marie ville.....	"	Stream	"	
Montreal.....	"	St. Lawrence and des Prairies rive.	"	
Nicolet.....	"	Nicolet riv.	"	
Quebec.....	"	St. Lawrence and St. Charles rive.	"	
Rimouski.....	"	St. Lawrence riv.	"	
St. Hyacinthe.....	"	Yamaska riv.	"	
St. Jérôme.....	Separate	North riv.	"	
St. John.....	Combined	Richelieu riv.	"	
St. Lambert.....	Separate	St. Lawrence riv.	"	
St. Raymond	"	Ste. Anne riv.	"	
Shawinigan Falls.....	Combined	St. Maurice riv.	"	
Sherbrooke.....	"	St. Francis and Magog rive.	"	
Sorel.....	"	St. Lawrence and Richelieu rive.	"	
Terrebonne.....	"	Jésus riv.	"	
Thetford Mines.....	"	Thetford riv.	"	
Three Rivers.....	"	St. Lawrence riv.	"	
Valleyfield.....	"	St. Lawrence riv.	"	
Westmount.....	"	Montreal sewers	"	
Windsor Mills.....	Separate	St. Francis riv.	"	
Ontario :				
Amherstburg	Combined	Detroit riv.	Not treated	

TABLE IV.—*Continued*

City or Town	Kind of Sewerage System	Where discharged	Sewage Treated or Not	Remarks
Ontario (Con.):				
Arnprior.....	Combined	Madawaska riv.	Not treated	
Barrie.....	Separate	Lake Simcoe	Treated	Treated through septic tank
Berlin.....	"	—	"	Septic tank and sand filtration
Brampton.....	"	Etobicokea riv.	"	Septic tank
Brantford.....	"	Grand riv.	"	
Brockville.....	"	St. Lawrence riv.	"	
Chatham.....	Combined	Thames riv.	"	
Cobourg.....	Separate	Lake Ontario	"	
Cornwall.....	Combined	St. Lawrence riv.	"	
Deseronto.....	Both sep. and comb.	Bay of Quinte	"	
Fort Frances.....	Combined	Rainy riv.	"	
Fort William.....	"	Kaministikwia and Neebing rvs.	"	
Gananoque.....	Separate	St. Lawrence riv.	"	
Goderich.....	Combined	Lake Huron	"	
Guelph.....	Separate	Speed riv.	Treated	Settling tank and filtration
Haileybury.....	"	Lake Timiskaming	"	Septic tanks
Hamilton.....	Combined			About one half of the sewage is treated
Kenora.....	"	Lake of the Woods	Not treated	
Kingston.....	"	St. Lawrence riv.	"	
Kingsville.....	"	Lake Erie	"	
Lindsay.....	"	Scugog riv.	"	
London.....	Both Sep. and Comb.	Thames riv.	Treated	Drained through coke beds
Midland.....	Separate	Georgian bay	Not treated	
Napanee.....	Combined	Napanee riv.	"	
New Liskeard.....	Separate		Treated	Sedimentation tanks
Niagara Falls.....	Combined	Niagara riv.	Not treated	
North Bay.....	Separate	Lake Nipissing	Treated	Septic tanks
Orillia.....	"	Lake Simcoe	"	Treated in liquefying tanks
Oshawa.....	"	Small stream	Not treated	Tanks for treatment proposed

TABLE IV.—*Continued*

City or Town	Kind of Sewerage System	Where discharged	Sewage Treated or Not	Remarks
Ontario (Con.):				
Ottawa.....	Combined	Ottawa riv.	Not treated	Small portion treated in septic tanks
Palmerston.....	"	Creek	"	Proposed septic tank treatment
Perth.....	"	Tay riv.	"	
Peterborough.....	Separate	Otonabee riv.		Small part treated by sedimentation tank
Port Arthur.....	Both Sep. and Comb.	Lake Superior	Not treated	
Prescott.....	Separate	St. Lawrence riv.	"	
Rainy River.....	"	Rainy riv.	Treated	Sedimentation tanks
Renfrew.....	"	Bonnechère riv.	Not treated	
St. Catharines.....	Combined	Stream to lake		
St. Thomas.....	"	Kettle creek	Treated	Septic tanks
Sandwich.....	Combined	Detroit riv.	Not treated	
Sarnia.....	"	St. Clair riv.	"	
Sault Ste. Marie.....	Separate	St. Mary riv.	"	
Smiths Falls.....	Combined	Rideau riv.	"	
Stratford.....	"		Treated	Septic tanks and coke filters
Sturgeon Falls.....	Separate	Sturgeon riv.	Not treated	
Sudbury.....	"	Junction and Nolin creeks	"	
Thessalon.....	Combined	Thessalon riv.	"	
Toronto.....	"	Toronto bay and lake Ontario		Small portion of sewage treated in septic tanks and contact beds. Sedimentation tanks, for disposal of all sewage, under construction
Walkerville.....	"	Detroit riv.	Not treated	
Welland.....	"	Welland riv.	"	
Windsor.....	"	Detroit riv.	"	
Woodstock.....	Both Sep. and Comb.		Treated	Septic tanks and filter beds

TABLE IV.—*Continued*

City or Town	Kind of Sewerage System	Where discharged	Sewage Treated or Not	Remarks
Manitoba				
Brandon.....	Combined	Assiniboine riv.	Not treated	
Carman.....	"	Boyne riv.	"	
Portage la Prairie..	Separate	Assiniboine riv.	"	
St. Boniface.....	Combined	Red riv.	"	
Souris.....	Separate		"	
Winnipeg.....	Combined	Red and Assiniboine rvs .	"	
Saskatchewan				
Moose Jaw.....	Separate	Moose Jaw creek	Treated	
Prince Albert.....	"	North Saskatchewan riv.	"	Septic tank treatment
Regina.....	Combined		"	Septic, sedimentation, and disinfection tanks, and biological filters
Saskatoon.....	Separate	South Saskatchewan riv.	Not treated	Sewage disposal works under construction
Alberta				
Calgary.....	Combined	Bow river	"	
Edmonton.....	"	North Saskatchewan riv.	"	Part of sewage treated in septic tank
Lethbridge.....	Separate	Belly riv.	Not treated	Sewage purification plant to be installed at once
Macleod.....	Combined	Oldman riv.	"	
Medicine Hat.....	Separate	South Saskatchewan riv.	"	Sewage purification plant under consideration
Red Deer.....	Combined	Red Deer riv.	"	Sewage purification plant under consideration
Wetaskiwin.....	"	Bigstone creek		Proposed sewage disposal works
British Columbia				
Kamloops.....	Separate	Thompson riv.	Treated	Septic tanks
Nelson.....	Combined	Kootenay riv.	Not treated	
New Westminster..	Both Sep. and Comb.	Fraser riv.	"	
Prince Rupert....	Separate	Pacific	"	
Rossland.....	Combined	Trail creek	"	
Vancouver.....	Both Sep. and Comb.	Pacific	"	

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